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10 *and Bradley Garlinghouse*

11 **UNITED STATES DISTRICT COURT**
12 **NORTHERN DISTRICT OF CALIFORNIA**

13 RIPPLE LABS INC., a Delaware corporation;
14 and BRADLEY GARLINGHOUSE,
an individual,

15 *Plaintiffs,*

16 v.

17 YOUTUBE, L.L.C., a Delaware company

18 *Defendant.*

No. 3:20-cv-2747-LB

FIRST AMENDED COMPLAINT FOR:

- (1) Violations of the Lanham Act for Direct Trademark Infringement
- (2) Violations of the Lanham Act for Contributory Trademark Infringement
- (3) Violations of California's Statutory and Common Law Right of Publicity
- (4) Violations of California's Unfair Competition Law

DEMAND FOR JURY TRIAL

INTRODUCTION

Plaintiffs Ripple Labs Inc. and Bradley Garlinghouse, by and through their attorneys, bring this First Amended Complaint against Defendant YouTube, L.L.C. for injunctive relief and damages.

Plaintiffs allege as follows:

1. For more than a year Ripple and Mr. Garlinghouse have suffered—and continue to suffer—irreparable harm to their public image, brand, and reputation. This harm is a direct consequence of YouTube’s decision to promote, legitimize, and profit from a pervasive and injurious fraud occurring on its platform.

2. This fraud—often and dubiously named “the XRP¹ Giveaway” (the “Scam”)—is an attack on Ripple’s brand, Mr. Garlinghouse’s reputation, and innocent individuals worldwide. The Scam occurs when YouTube users impersonate Ripple and/or Mr. Garlinghouse in order to deceive other users into handing over XRP based on the false promise that they will receive a windfall of XRP in return. Once the unsuspecting user sends the requested XRP, he or she becomes a victim of the Scam—and no XRP is ever returned.

3. To be sure, YouTube is not the sole perpetrator of the Scam. Unknown co-conspirators play a role. But YouTube actively contributes to the Scam by promoting it, legitimizing it, and profiting from it, while ignoring Ripple’s repeated demands for action.

4. The Scam has been replicated many times over. Each passing day brings new iterations of the same essential Scam, leaving countless victims in its wake. While Plaintiffs cannot know the precise number of defrauded individuals, the scope of the harm is vast. As of April 2020, one independent estimate suggested that the Scam had, by that point, already resulted in the theft of more than **8.5 million XRP**, representing over **\$4.7 million** at current prices.²

5. The Scam has also irreparably harmed Ripple’s brand and Mr. Garlinghouse’s reputation. By infringing on Ripple’s protected trademarks and misappropriating Mr. Garlinghouse’s image and

¹ XRP is the digital asset native to the XRP Ledger, an open-source, distributed-ledger technology. *Infra* ¶¶ 24-27. Ripple did not create and does not control the XRP Ledger. *Infra* ¶ 27.

² See T. Wright, *Community Fraud Site Tracks 8.5M XRP Lost To Giveaway Scams*, COINTELEGRAPH (Apr. 24, 2020), available at <https://cointelegraph.com/news/community-fraud-site-tracks-85m-xrp-lost-to-giveaway-scams>.

1 likeness, the Scam fosters the false belief that Ripple and Mr. Garlinghouse are somehow associated
2 with or to blame for the Scam (when they are not).

3 6. Ripple has repeatedly demanded that YouTube take action to stop the Scam and prevent
4 further harm. Since the Scam surfaced on YouTube, Ripple has sent **1,375 takedown notices** to
5 YouTube—the vast majority of which reported instances of trademark infringement. Yet YouTube
6 refuses to take meaningful action to stop the Scam and prevent further harm, even where the same
7 scheme is replicated time and again on its platform, and it possesses the technical capabilities to do so.
8 YouTube’s response has been woefully inadequate and incomplete.

9 7. YouTube regularly touts its robust tools for self-regulating content on its platform, which
10 purportedly include “cutting-edge machine learning technology” and a sprawling network of human
11 reviewers. But in this case, faced with a pervasive Scam, YouTube chose, and continues to choose, to
12 contribute to the Scam, rather than help its victims.

13 8. The Scam is continuing to thrive on YouTube despite the initiation of this action many
14 months ago, and despite YouTube having actual notice of the Scam and the resultant harm. Indeed,
15 even in the days before the filing of this First Amended Complaint, the Scam is rampant on YouTube—
16 with instances of the Scam being viewed by **tens of thousands of potential victims** in a matter of hours.
17 *Infra* ¶ 91.

18 9. YouTube’s affirmative support of the Scam and its refusal to stop the fraud undermines
19 YouTube’s public commitments. YouTube’s Community Guidelines purport to ban “scams,” which are
20 defined as “[c]ontent offering cash gifts, ‘get rich quick’ schemes, or pyramid schemes[.]” Ex. 1. As an
21 example of an impermissible “scam,” YouTube cites content that “make[s] exaggerated promises, such
22 as claims that viewers can get rich fast.” *Id.* YouTube’s Community Guidelines thus bar precisely the
23 sort of content at issue in this case. Yet YouTube has ignored Ripple’s repeated demands for action and
24 instead enables the Scam to flourish.

25 10. YouTube has affirmatively contributed to the Scam in several ways.

26 11. First, YouTube has profited from the Scam by helping to create, selling, and then
27 optimizing fraudulent ads that promote the Scam. These ads directly infringe on Ripple’s marks and
28 misappropriate Mr. Garlinghouse’s likeness. When a YouTube user clicks on one of the fraudulent ads,

1 YouTube brings the user to a channel page that is actively promoting the Scam. Despite being
2 informed of the Scam and its attributes on numerous occasions, YouTube sold and helped disseminate
3 advertisements that amplified the Scam's reach and impact. *Infra* ¶¶ 59-72.

4 12. Separate and apart from these fraudulent ads, YouTube also generated revenue by
5 presenting ads to YouTube users exposed to the channels and accounts that promoted the Scam.

6 13. YouTube thus has two different sources of ad revenue relating to the Scam. The Scam
7 therefore goes to the heart of YouTube's business model, which depends on maximizing ad revenue.
8 YouTube has succeeded: the company generated more than \$15 billion in revenue last year through ads
9 alone and is growing at a breakneck annual pace of about 36 percent. Ex. 3 at 29.

10 14. Second, YouTube has expressly (but falsely) validated the Scam as legitimate. By
11 awarding a "verification badge" to a hacked channel that was impersonating Ripple and Mr.
12 Garlinghouse, YouTube created new content that communicated to hundreds of thousands of viewers
13 and subscribers that the hacked account was "the official channel of a creator, artist, company, or public
14 figure." This was completely false and profoundly harmful. Separately, YouTube has verified a number
15 of other accounts that were actively engaged in the Scam, thereby granting these accounts a more
16 diverse tool set with which to promote the Scam. This enhanced functionality—specifically, the ability
17 to livestream content, which has been routinely utilized in the Scam—signals to YouTube users that
18 YouTube has verified the account.

19 15. Third, YouTube uses its sophisticated algorithmic search and advertising tools to
20 recommend and present instances of the Scam to YouTube users—expressly targeting those users who
21 are most susceptible to falling victim to the Scam. That is, YouTube used its search algorithm—which
22 uses Ripple's protected marks and Mr. Garlinghouse's name and image—to present the Scam to
23 YouTube users who searched for legitimate and authentic content. Likewise, YouTube's ad
24 algorithms—which, again, make use of Ripple's protected marks and Mr. Garlinghouse's name and
25 likeness—presented fraudulent Scam ads to users who YouTube knows or should have known are most
26 likely to be deceived by the Scam content.

27 16. YouTube's refusal to take appropriate remedial action compels Ripple to seek relief from
28 the Court. The Court should compel YouTube to fulfill its legal obligations, to discontinue its unlawful

1 conduct, and to prevent further irreparable harm to Ripple’s brand and Mr. Garlinghouse’s reputation,
2 which, in turn, will prevent further financial injury to the individuals who are duped by the Scam.
3 Absent a court order obligating YouTube to act, the Scam will undoubtedly continue to flourish and
4 create countless more victims.

5 **PARTIES**

6 17. Plaintiff Ripple Labs Inc. is a leading enterprise blockchain company founded on a
7 simple but powerful idea: to enable financial institutions to instantly and reliably send money across
8 borders for fractions of a penny. Ripple’s global payments network has over 300 enterprise customers
9 across 40 countries. Ripple employs more than 450 individuals in nine global offices. Ripple is a
10 Delaware corporation with its principal place of business in San Francisco, California.

11 18. Plaintiff Bradley Garlinghouse is the CEO of Ripple and resides in California.

12 19. Defendant YouTube is a Delaware limited liability company with its principal place of
13 business in San Bruno, California.

14 **JURISDICTION**

15 20. The Court has federal question jurisdiction, pursuant to 28 U.S.C. § 1331, over Ripple’s
16 first and second causes of action for direct and contributory trademark infringement in violation of the
17 Lanham Act, 15 U.S.C. § 1114(1).

18 21. The Court has supplemental jurisdiction, pursuant to 28 U.S.C. § 1367, over Ripple’s
19 third and fourth state law causes of action—for misappropriating the right of publicity and for violating
20 California’s Unfair Competition Law—because each of these claims arises out of the same nucleus of
21 operative fact as Ripple’s federal claim.

22 22. Venue is proper in the Northern District of California pursuant to 28 U.S.C. § 1391(b).

23 23. The Court has general personal jurisdiction over YouTube because the company’s
24 principal place of business is at 901 Cherry Ave., San Bruno, California, 94066.

FACTS**A. XRP and the XRP Ledger.**

24. XRP is a digital asset that is native to the XRP Ledger, an open-source, distributed ledger technology that provides a secure mechanism for executing financial transactions.

25. The XRP Ledger was built to solve problems with global payments—it is fast, reliable, and scalable.

26. Anyone can build on the XRP Ledger and it is maintained by a diverse set of software engineers, server operators, and validators (i.e., entities who “validate” new transactions algorithmically based on the protocol rules).

27. Ripple did not create the XRP Ledger and does not own, control, or manage it.

B. Ripple’s success and the value of its marks.

28. Ripple was created in 2012 to realize its founders’ vision of a world where money can move as quickly and securely as information—a concept referred to as the Internet of Value.

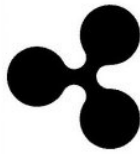
29. Ripple offers a distributed financial network combined with financial solutions—some of which seek to utilize XRP’s speed, reliability, and scalability—to make the Internet of Value a reality. Ripple’s network facilitates interbank communications and transaction settlement, provides liquidity for financial institutions, and offers a payment interface where corporations, payment providers, and banks can seamlessly and transparently make global payments. As of 2020, Ripple counts more than 300 financial institutions as customers.

30. Ripple’s customers can use XRP for sourcing liquidity in cross-border transactions, thereby ensuring instant settlement, lower exchange fees, and more efficient use of working capital.

31. Mr. Garlinghouse became CEO of Ripple in 2017. In this role, Mr. Garlinghouse serves as the public face of Ripple. He is a trusted and respected voice on Ripple and is a public thought leader on issues relating to financial technology and digital assets.

32. As Ripple has grown, so too has the value of Ripple’s brand. Ripple owns trademarks that include, but are not limited to, “Ripple,” “Ripple Labs,” and the company’s distinctive triskelion logo, which consists of three connected circles.

33. These marks are registered as follows:



RIPPLE

Serial: 86577810
Registration: 4850428
Date: Nov. 10, 2015

Serial: 85774758
Registration: 4453543
Date: Dec. 24, 2013



RIPPLE LABS

Serial: 86052926
Registration: 4528771
Date: Aug. 30, 2013

Serial: 86581262
Registration: 4841452
Date: Oct. 27, 2015

34. The terms “Ripple” and “Ripple Labs” are registered as standard character marks, such that the single word mark protects the phrase regardless of the font, size, or color used. The triskelion logo trademark is registered and protected without regard to color. All of Ripple’s registered trademarks are distinctive, non-functional, and have no secondary meaning.

35. Ripple’s brand and marks define its identity and are at the core of how the company represents itself to the public.

C. The YouTube platform.

36. YouTube is a video-sharing platform that generates \$15 billion in annual revenue, making it one of the internet’s largest publishers. YouTube’s primary source of revenue comes from selling ads to third parties. Although these ads come in several varieties, the source of revenue is essentially the same: YouTube profits from its users and creators.

37. In most important ways, then, YouTube is analogous to other online platforms, including eBay and Alibaba. Whereas eBay creates a platform to connect buyers and sellers, YouTube similarly links viewers and content creators. YouTube’s viewers are akin to eBay’s buyers—paying for content with their attention spans. YouTube’s creators are akin to eBay’s sellers—producing content that

1 maximally attracts and holds the viewers' attention. Meanwhile, both platforms—eBay and YouTube—
2 monetize this relationship in several ways, including by selling ads and entering into partnerships with
3 sellers / content creators.

4 38. Consequently, just as eBay has an economic relationship with its sellers and advertisers,
5 YouTube likewise has an economic relationship with its content creators (including through revenue
6 sharing) and its advertisers.³ Thus, just as eBay may have an incentive to delay an investigation or a
7 takedown if a seller is particularly profitable, YouTube faces the same incentive with respect to popular
8 creators—even ones, like those at issue in this case, who are actively and obviously engaged in
9 infringement, impersonation, and outright fraud. Finally, both eBay and YouTube have the ability to
10 police their own platforms, including by terminating sellers or creators that engage in unlawful conduct.
11 In contrast, the primary difference between eBay and YouTube is simply that eBay has more diverse
12 revenue streams and is not entirely dependent on *selling* the attention of its own users for *profit*—
13 whereas YouTube has made this the core feature of its business model.

14 39. YouTube enables its users to view, post, and comment on video content. All of this
15 occurs on YouTube's platform, hosted at www.YouTube.com.

16 40. YouTube "creators"—the term for users who post videos—can also set up their own
17 "channel," which makes it easier for users to find all of a creator's content in one place. These channels
18 allow creators to develop a following. The most popular YouTube channels have amassed more than
19 one hundred million subscribers worldwide. Because of this reach, YouTube is a valuable tool for
20 reaching vast audiences.

21 41. YouTube has robust tools to self-regulate content on its platform. There is no doubt that
22 YouTube is capable of identifying, flagging, and removing fraudulent content, including content similar
23 to the kinds of videos at issue in the Scam. YouTube regularly touts these capabilities and, in particular,
24 highlights its ability to use these tools to detect misleading and fraudulent scams. Ex. 4.

25 42. YouTube's Community Guidelines purport to bar "scams" and "other deceptive practices
26 that take advantage of the YouTube community." Ex. 1. Included in YouTube's definition of "scams"

27 ³ See, e.g., *How YouTube Ad Revenue Works*, INVESTOPEDIA, available at
28 <https://www.investopedia.com/articles/personal-finance/032615/how-youtube-ad-revenue-works.asp> (explaining revenue sharing between YouTube and content creators).

1 is “content offering cash gifts, ‘get rich quick’ schemes, or pyramid schemes (sending money without a
2 tangible product in a pyramid structure).” *Id.* As an example of a prohibited scam, YouTube cites
3 content that makes “exaggerated promises, such as claims that viewers can get rich fast,” promotes
4 “cash gifting or other pyramid schemes,” or is “dedicated to cash gifting schemes.” YouTube claims
5 (falsely, it seems) that if content violates this policy, they will “remove the content.” *Id.*

6 43. In YouTube’s own words, it uses and relies upon “a combination of people and
7 technology to flag inappropriate content and enforce these guidelines.” Ex. 4. YouTube’s people
8 include “over 150 academics, government partners, and NGOs.” Ex. 5. And its technologies include
9 “cutting-edge machine learning.” Ex. 6.

10 44. YouTube is also a “core product[] and platform[]” of Google, Ex. 3 at 5, which employs
11 a “global team of over a hundred PhDs, data scientists, engineers, and researchers” that “constantly
12 monitor[] and analyze[] traffic” on behalf of YouTube. Ex. 7.

13 **D. The Scam thrives on YouTube.**

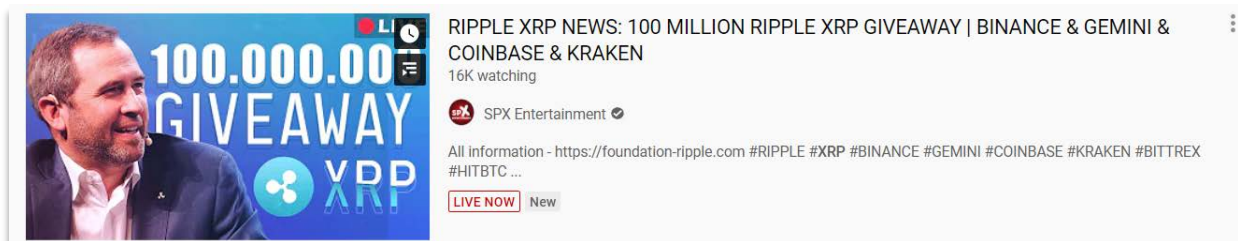
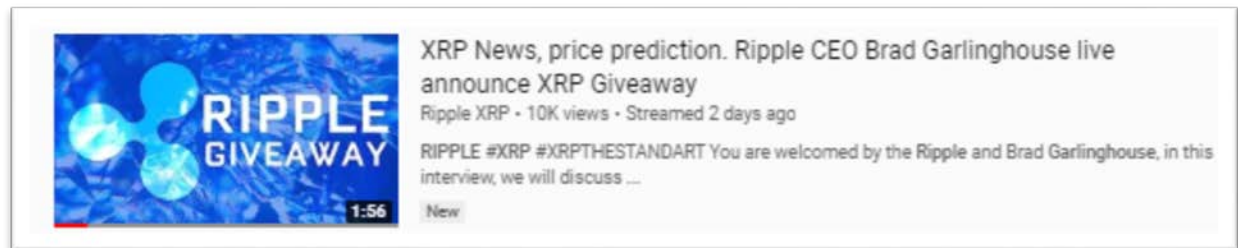
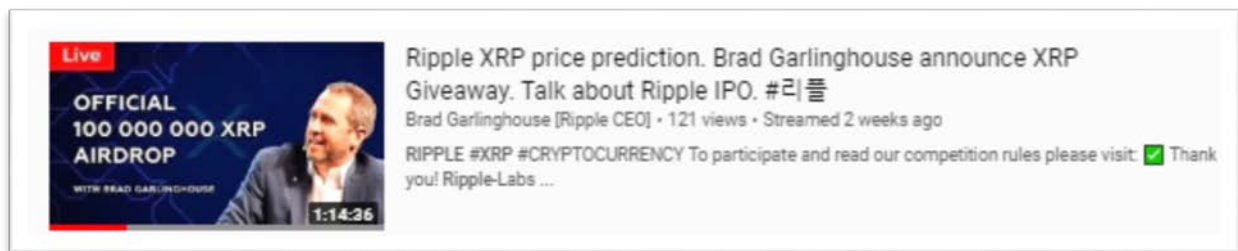
14 45. Since at least November 2019, the Scam has been pervasive on YouTube. At core, the
15 Scam involves YouTube channels and accounts that impersonate Ripple and Mr. Garlinghouse for the
16 purpose of promoting a fraudulent and fictitious “XRP Giveaway.” The Scam typically proceeds as
17 follows.

18 46. The Scam begins when an unknown third party creates a new YouTube account or
19 channel, or takes control of an existing one. Where a *new* YouTube account or channel is created, the
20 third party will use various social media platforms to drive organic traffic to the account. Some of these
21 third parties also buy fraudulent ads from YouTube to drive traffic to the new account or channel.
22 Alternatively, a third party may avoid the need to generate traffic altogether by taking over an *existing*
23 YouTube channel or account—often via a spear-phishing attack on the legitimate owner. The accounts
24 targeted by such attacks are popular, often having hundreds of thousands, if not millions, of subscribers.

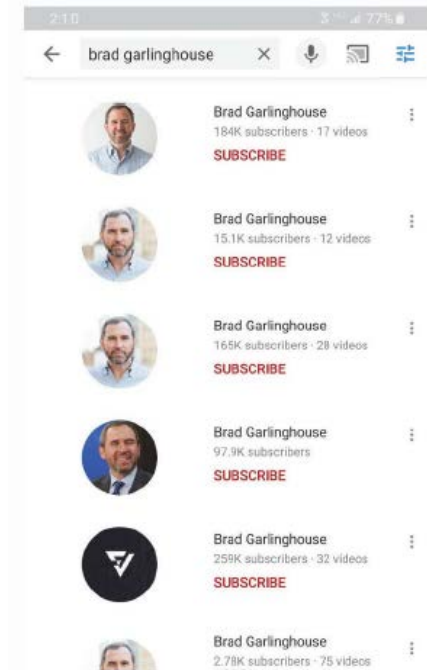
25 47. Under either approach, YouTube itself—via its algorithmic recommendations, its account
26 verification tools, and its sale of fraudulent ads that target interested viewers—is instrumental in driving
27 traffic to these accounts and channels.

48. Once the new YouTube account is up and running with traffic—or the third party has established control over an existing, popular YouTube account—the Scam begins in earnest.

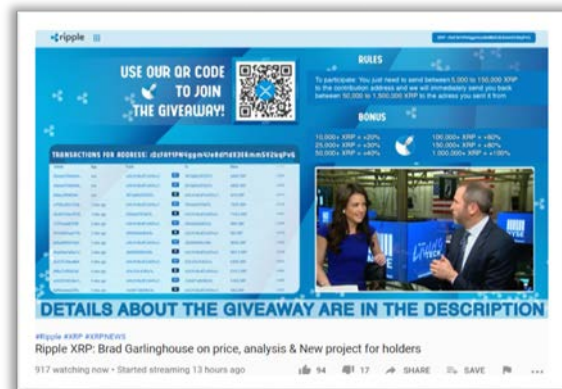
49. Specifically, these YouTube channels and accounts are then used to impersonate Ripple and/or Mr. Garlinghouse. This is achieved through the misuse of Ripple’s protected marks and/or misappropriation of Mr. Garlinghouse’s name, image, and likeness. The channels and accounts often take names relating to Ripple and or Mr. Garlinghouse (e.g., “Brad Garlinghouse [Ripple CEO]” or “Ripple XRP”), while prominently featuring pictures of Mr. Garlinghouse. For example:



50. In order to render the deception credible, the YouTube accounts and channels infringe upon Ripple's protected marks and misappropriate Mr. Garlinghouse's image, name, and likeness. This deceives and confuses YouTube users into believing these fraudulent accounts are, in fact, the "official" channels of Ripple and Mr. Garlinghouse.



51. Once the accounts have deceived users by impersonating Ripple and/or Mr. Garlinghouse, the channels start to post Ripple-related video content. Superimposed across these videos is a message instructing viewers on how to learn more about the fake "giveaway." For example, one message stated: "Details About The Giveaway Are In The Description." On some occasions, YouTube's "live chat" function is also used to promote the Scam. *Infra* ¶ 91.



52. Beneath the video, the mechanics of the Scam are described in greater detail: To “participate” in the “Giveaway,” the viewer is instructed “to send between 5000 XRP to 1,000,000 XRP” to a specific virtual currency wallet; in return, the post promises, the sender will receive “between 25,000 XRP to 5,000,000 XRP to the address you sent it from.”



To participate you just need to send between 5000 XRP to 1000000 XRP to the contribution address and we will immediately send you back between 25000 XRP to 5000000 XRP to the address you sent it from. Every person can participate only one time; the minimum contribution is 5000 XRP and the maximum contribution is 1000000 XRP.

53. After the victim sends XRP to the stated address, their XRP is gone and they never receive anything in return. They become another victim of the Scam. Ex. 8.

E. YouTube promotes, legitimizes, and profits from the Scam.

1. YouTube uses Ripple’s protected marks to popularize the Scam.

54. Instances of the Scam have been effective—regularly garnering tens of thousands of views or live viewers. This is not an accident; it is the product of YouTube’s highly-effective algorithmic approach to content. YouTube’s algorithms “decide[] what people watch on YouTube 70% of the time.” And more than 81% of YouTube users say they often rely on YouTube’s algorithms for content recommendations.⁴

55. As YouTube describes it, the algorithm is a “real-time feedback loop that tailors videos to each viewer’s different interest.” YouTube decides which videos will get suggested to individual users and which videos are displayed in response to a user’s search. YouTube’s goal is thus two-fold: “find the right video for each viewer, and get viewers to keep watching.”⁵

⁴ P. Cooper, *How the YouTube Algorithm Works*, HOOTSUITE (Aug. 18, 2020), available at <https://blog.hootsuite.com/how-the-youtube-algorithm-works/> (last visited Dec. 3, 2020).

⁵ *Id.*

56. YouTube's algorithm depends, in large part, on keyword associations. So, if a user searches for "baseball," YouTube will return a range of videos that, based on YouTube's algorithm, relate in some manner to baseball. Such search results may include, for example, content about the San Francisco Giants, the latest popular videogame, or a video showcasing a new high-performing type of baseball bat.

57. In the context of the Scam, YouTube has used Ripple's protected marks—such as "Ripple" and "Ripple Labs"—to extend the reach of the Scam. That is, YouTube's algorithm has used Ripple's protected marks to present and recommend fraudulent content (i.e., instances of the Scam) to users who run searches on YouTube for legitimate phrases or terms (i.e., for "Brad Garlinghouse"). Thus, a YouTube user who searches for legitimate content relating to "Garlinghouse," will often instead receive fraudulent content that promotes the Scam. This is a direct function of YouTube's algorithms and content-recommendation tools, which associate Ripple's protected marks (i.e., "Ripple" and "Ripple Labs") with broader, more generic terms.

58. Without YouTube affirmatively recommending instances of the Scam to its users, the harm produced by the Scam would have been substantially reduced.

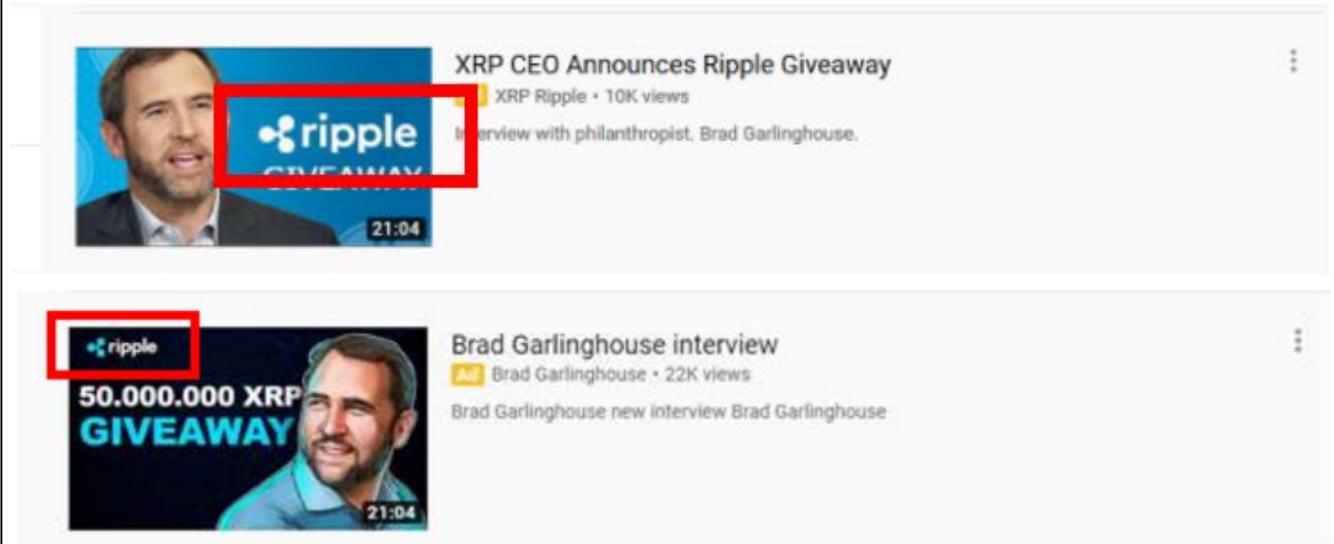
2. YouTube promotes and profits from the Scam by selling fraudulent ads.

59. In addition to algorithmically amplifying the Scam, YouTube has also actively promoted the Scam and accelerated its reach by selling fraudulent ads.

60. YouTube profits from knowingly selling paid ads that promote the Scam. These ads—so-called "video discovery ads"—are designed by YouTube to appear at the top of its search result page alongside organic search results, as "related" or "suggested" videos, and on certain mobile homepages.

61. These ads, which are the end product of a collaboration between YouTube and the third-party fraudsters, directly infringe on Ripple's marks and misappropriate Mr. Garlinghouse's likeness. YouTube targets these ads to ensure they are presented to YouTube users who search for particular terms, including Ripple's protected marks, such as "Ripple." When a user clicks on the ad, he or she is redirected to a channel that is actively promoting the Scam.

62. YouTube's role in creating these ads is undeniable: YouTube (not the user) generates the thumbnail image featured in the ad (e.g., the pictures, below, of Mr. Garlinghouse, Ripple's marks, and the superimposed text promoting the Scam); YouTube (not the user) creates and contributes the "video view count" content (e.g., "22k views" or "10K views"); and YouTube formats, structures, and designs the ads in a manner that promotes engagement—including by prominently featuring the entity who paid for the ad (e.g., "XRP Ripple" and "Brad Garlinghouse," below).



63. YouTube's role in creating the content of the ad is tied directly to what makes the ads unlawful: by choosing a thumbnail image that features Ripple's mark and Mr. Garlinghouse's name and image, YouTube (not the user) is driving the infringement of Ripple's protected marks and the misuse of Mr. Garlinghouse's likeness.

64. Moreover, by adding "video view counts"—which typically depict numbers in the tens of thousands—to these fraudulent ads, YouTube is signaling that the ads are legitimate. The view count of a fraudulent ad is information that only YouTube can know and therefore only YouTube can contribute to the ad. The view count is dynamic—it cannot be known by the third-party fraudsters when they make their contribution to the ad.

65. And given the objective of the Scam—to impersonate Ripple and Mr. Garlinghouse in order to give credence to the fraudulent "XRP Giveaway"—it was necessary for the ads to appear to YouTube's users as legitimate and authentic in its use of Ripple's and Mr. Garlinghouse's identities.

66. With respect to the video view counts, YouTube users understand that a video that has been viewed more times is more likely to be legitimate than one that has not. For example, a user would not expect that a legitimate “XRP Giveaway” video featuring Mr. Garlinghouse to have only a few dozen views. If a figure with the prominence of Mr. Garlinghouse put up a legitimate ad in which he promised to giveaway 50,000,000 XRP, a YouTube user would expect such a legitimate video to have been viewed tens of thousands of times. Of course, no such legitimate video or ad exists, because no such giveaway has ever been legitimate—a point Mr. Garlinghouse has made publicly and which has been conveyed directly to YouTube.

67. Therefore, YouTube’s inclusion of the view count on many of the fraudulent ads contributed to the appearance that the ads were legitimate uses of Ripple’s marks and Mr. Garlinghouse’s identities, and therefore that the “XRP Giveaways” discussed in the ads were real.

68. The same is true as to YouTube’s decision to feature in the ad the entity who paid for it. Because these entities often adopted names that infringed on Ripple’s marks and/or related to Mr. Garlinghouse (e.g., “XRP Ripple” and “Brad Garlinghouse”), YouTube’s conduct further reinforced the legitimacy of the ad.

69. Of course, YouTube’s involvement with the fraudulent ads does not end there. After helping to create the ads, YouTube then approved them, uploaded them, endorsed them, and optimized them to attract as many YouTube users and clicks as possible, based on its algorithms and search engine optimization techniques.

70. YouTube’s optimization of these ads is particularly pernicious, as YouTube presents the fraudulent ads to those specific users who YouTube determines are most vulnerable to falling victim to the Scam. YouTube’s optimization of ads occurs through an algorithm that uses the content of the ad (such as the ads’ images, keywords, and metadata) to identify YouTube users who—based on their demographic characteristics, past viewing habits, and interests—are most likely to engage with the ad.

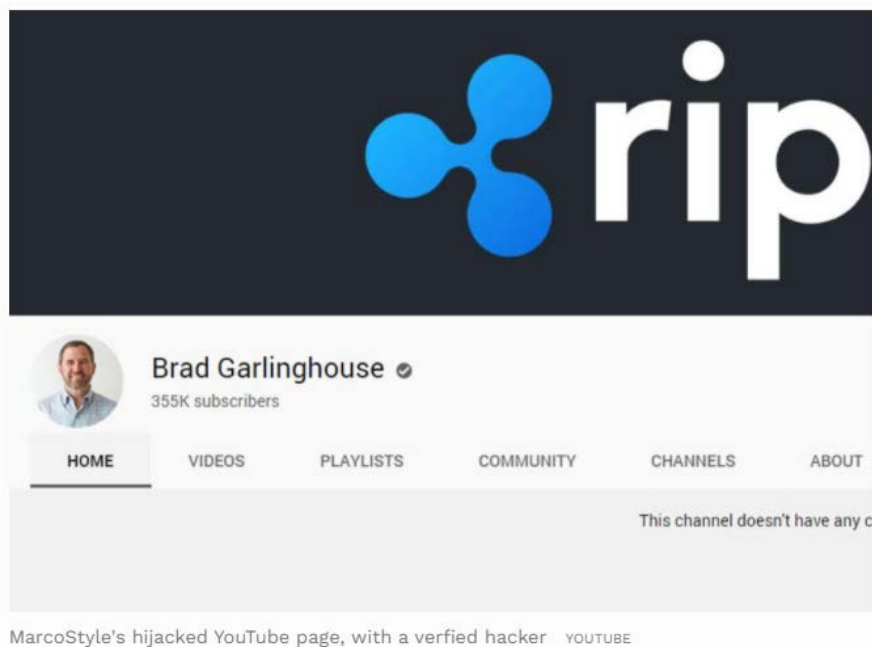
71. In the context of the fraudulent ads, this means that YouTube uses the content of the ads (i.e., Ripple’s protected marks and Mr. Garlinghouse’s name, image, and likeness) to target YouTube users whom YouTube believes are most likely to engage with the ad (i.e., individuals who are interested in cryptocurrencies or who are curious about Ripple).

72. When a YouTube user clicks on the ad, the user is taken directly to a YouTube channel running the Scam. YouTube is paid to optimize the ads by revenue share. Here, YouTube sought to yield as many clicks as possible for the fraudsters, and to optimize its own revenue. YouTube thus knowingly aids the Scam and profits from it. YouTube did so despite knowing it was not authorized—by virtue of the numerous takedown notices and other public discussion of the Scam—to promote or sell anything related to Ripple.

3. YouTube legitimizes and promotes the Scam through verification.

73. YouTube has also actively promoted the Scam by verifying channels and accounts that are actively engaged in the Scam.

74. Take the case of popular YouTube creator MarcoStyle, who at the time of the incident owned a channel with approximately 361,000 subscribers. MarcoStyle's YouTube account was hacked on November 3, 2019. Exs. 8-9. MarcoStyle immediately notified YouTube of the issue and YouTube confirmed it was aware of the problem. Thereafter, the name of his YouTube channel was changed from "MarcoStyle" to "Brad Garlinghouse" and the channel's profile image was modified to feature a picture of Mr. Garlinghouse. Several days later—*with hackers still in control*—YouTube inexplicably awarded the channel a verification badge, which YouTube purports to reserve for channels that are "authentic." Ex. 10. This one instance of the Scam resulted in at least \$15,000 of stolen XRP.



75. By awarding a verification badge—which takes the form of a well-known and recognizable checkmark next to the user’s channel name—YouTube communicated to its massive user base that YouTube had “verified” the channel as the “official channel” of the creator. As YouTube itself states, “[v]erified channels help distinguish official channels from other channels with similar names[.]”

76. Only YouTube can verify a channel. Ex. 10. YouTube’s verification criteria do not allow channels to self-verify or for other users to verify a channel. Nor does YouTube’s verification criteria simply aggregate user-provided data, in the way that the count of likes and dislikes on a video does. Instead, YouTube states that after a channel applies for verification, **YouTube** will “review your channel,” and “may also ask for more info or documentation” before **YouTube** will conclude that the channel is “authentic.” *Id.*

77. The presence of a verification badge communicates to YouTube’s users that the channel bearing the badge is “authentic,” and “the official channel of a creator, artist, company, or public figure,” and distinguished from “other channels with similar names on YouTube.” *Id.* Because only YouTube can apply a verification badge to a channel, only YouTube can speak with this level of authority to the community. Any user or channel can call themselves the “official” account of a public figure or company; only YouTube can apply a verification badge to the channel, communicating to the world that the channel, and by extension its content, is “authentic” and “official” from the purported owner of the channel.

78. Thus, by awarding verification badges to a channel that was actively engaged in the Scam, YouTube created content (i.e., the familiar checkmark) and communicated to millions of YouTube users that the verified channel was Mr. Garlinghouse’s “official account”—when precisely the opposite was true. ***This was central to what made the channel’s conduct unlawful:*** namely, the use of Ripple’s marks and misappropriation of Mr. Garlinghouse’s name and likeness in order to deceive YouTube users into believing the channel was authentic and legitimate.

79. YouTube’s verification of MarcoStyle’s hacked channel is all the more surprising given the company’s representation to the public that it “won’t verify channels that are trying to impersonate another creator or brand.”

80. Another example of YouTube's assistance is its verification of YouTube *accounts*, which is separate from its awarding of verification badges to *channels*. Ex. 11. To verify an account, one enters a verification code sent by text or voice call. A verified account can live stream, upload videos longer than 15 minutes, and add custom thumbnails to videos. Scammers have used all three of these privileges to promote the Scam.

81. By awarding enhanced functionality to accounts that were actively engaged in the Scam, YouTube communicated to its users that YouTube had verified these accounts and that the accounts were worthy of verification. Here, too, YouTube's role materially contributed to what made the underlying content unlawful: namely, by communicating a message to its vast user base that these accounts were authentic and legitimate when, in fact, they were anything but.

82. Plaintiffs do not know the actual number of defrauded victims. But on information and belief, Plaintiffs allege that thousands of people have likely been defrauded out of hundreds of thousands of dollars of XRP to date (if not substantially more). Moreover, the Scam continues to cause widespread harm, including by irreparably harming Ripple's brand and Mr. Garlinghouse's reputation.

F. YouTube had actual and constructive knowledge of the Scam, but refused to stop it.

83. As the threat posed by the Scam grew towards the end of 2019, Ripple enlisted the company's third-party cybersecurity vendor to prevent further damage to Ripple's brand and Mr. Garlinghouse's reputation.

84. At Ripple's direction, its vendor utilized a proprietary platform to rapidly detect, verify, and respond to new occurrences relating to the Scam.

85. Since the Scam began, Ripple has submitted ***1,375 takedown demands*** to YouTube that relate directly to the Scam. The vast majority of these demands asserted trademark infringement.

86. YouTube ignored or otherwise failed to address many of these takedown demands—often ignoring ten or more such demands before finally taking steps to remove the Scam content. When YouTube finally took action, it did so only belatedly. The following is a representative sample of YouTube's deficient responses:

- On November 12, 2019, Ripple submitted a trademark-related takedown notice to YouTube regarding a hacked YouTube channel with 21,600 subscribers that falsely claimed to be "Brad

Garlinghouse [Ripple CEO]” and actively promoted the Scam. Ripple sent **12 additional takedown notices** to YouTube in connection with this channel. These notices expressly raised trademark infringement. The channel remained active **for more than three months (112 days)** until finally being taken down on March 3, 2020.

- On December 2, 2019, Ripple sent a trademark-related takedown notice to YouTube in connection with an account that was impersonating Ripple through abuse of its protected marks. Ripple subsequently sent **13 more takedown notices** to YouTube in connection with this channel. The fraudulent account remained active on YouTube for **nearly 5 months (142 days)** until April 22, 2020—the day after this lawsuit was filed—when it was removed from the platform.
- On December 7, 2019, Ripple sent a trademark-related takedown notice to YouTube in connection with an account using the name “Brad Garlinghouse – Ripple CEO” to impersonate Mr. Garlinghouse and infringe on Ripple’s marks. Ripple sent **8 more takedown notices** to YouTube before the fraudulent content was finally removed on March 3, 2020, nearly **3 months (87 days)** later.
- On December 18, 2019, Ripple sent a trademark-related takedown notice to YouTube in connection with an account that was impersonating Ripple and infringing on the company’s protected marks. Ripple sent **14 additional takedown notices** to YouTube in connection with this infringement. The infringement continued for **more than five months (152 days)** until May 18, 2020, when the channel appears to have been returned to its legitimate owner and the infringement ceased.
- On January 2, 2020, Ripple submitted a takedown notice to YouTube in connection with a hacked YouTube channel belonging to YouTube creator Festinha do Rodil with 327,000 subscribers. Ex. 12 at 5. After Rodil lost control, the account used the name “Brad Garlinghouse [Ripple CEO]” and an image of Mr. Garlinghouse to actively promote the Scam. YouTube took corrective action **three weeks later** on January 22, 2020.
- On January 21, 2020, Ripple submitted a trademark-related takedown notice to YouTube regarding a channel that actively promoted the Scam. Ripple submitted **12 additional takedown notices** to YouTube in connection with this channel. The channel remained active on YouTube until on or around September 11, 2020, more than **7 months (234 days)** later—long after initiation of this lawsuit.
- On January 22, 2020, Ripple submitted trademark-related takedown notice to YouTube in connection with a channel that was abusing Ripple’s protected marks. Ripple sent **12 more takedown** to YouTube before the problematic content was finally removed on March 2, 2020, nearly **two months (56 days)** later.
- On January 22, 2020, Ripple submitted a trademark-related takedown notice to YouTube in connection with a channel that was infringing on Ripple’s marks and impersonating Mr. Garlinghouse. Ripple sent **17 more takedown notices** to YouTube until the problematic content was finally removed on September 17, 2020, nearly **eight months (239 days)** later—again long after the initiation of this lawsuit.
- On January 26, 2020, Ripple submitted a trademark-related takedown notice to YouTube in connection with a channel that was infringing on Ripple’s marks and impersonating Mr.

Garlinghouse. Ripple sent **13 more takedown notices** to YouTube before the unlawful content was removed, more than **3 months (95 days)** later on April 30, 2020—shortly after this lawsuit was filed.

- On January 27, 2020, Ripple submitted a takedown notice to YouTube in connection with a hacked YouTube channel belonging to verified YouTube creator BestGuyEver with 96,400 subscribers. Ex. 13. Under the name “Brad Garlinghouse,” the account posted several videos promoting the Scam. YouTube delayed until February 3, 2020 to take corrective action.
- On January 29, 2020, Ripple submitted a trademark-related notice to YouTube in connection with an account named “Ripple” that was using Ripple’s protected marks as its avatar in order to impersonate the company. Ripple sent **8 additional takedown notices** to YouTube, but the infringing content remains on YouTube for another **34 days** until March 3, 2020.
- On February 10, 2020, Ripple submitted a trademark-related takedown notice to YouTube in connection with an account that had more than 25,000 subscribers and was impersonating Ripple and abusing its protected marks. Ripple sent **13 more takedown notices** to YouTube with no apparent response. The infringing content was finally taken down **nearly 3 months (86 days)** later on May 6, 2020.
- On February 11, 2020, Ripple sent a trademark-related takedown notice to YouTube in connection with an account named “Brad Garlinghouse [CEO at Ripple]” that used Mr. Garlinghouse’s likeness and infringed on Ripple’s marks. Ripple sent **11 more takedown notices** to YouTube without effect. The fraudulent account was finally taken down on March 31, 2020, **nearly 2 months (49 days)** later.
- On May 26, 2020—over a month after the instant lawsuit was filed—Ripple sent a trademark-related takedown notice to YouTube in connection with an account that was named “Brad Garlinghouse” and which featured a photo of Mr. Garlinghouse as its avatar. Ripple sent **three additional takedown notices** to YouTube. The content was eventually taken down on July 5, 2020, **more than 40 days** later.

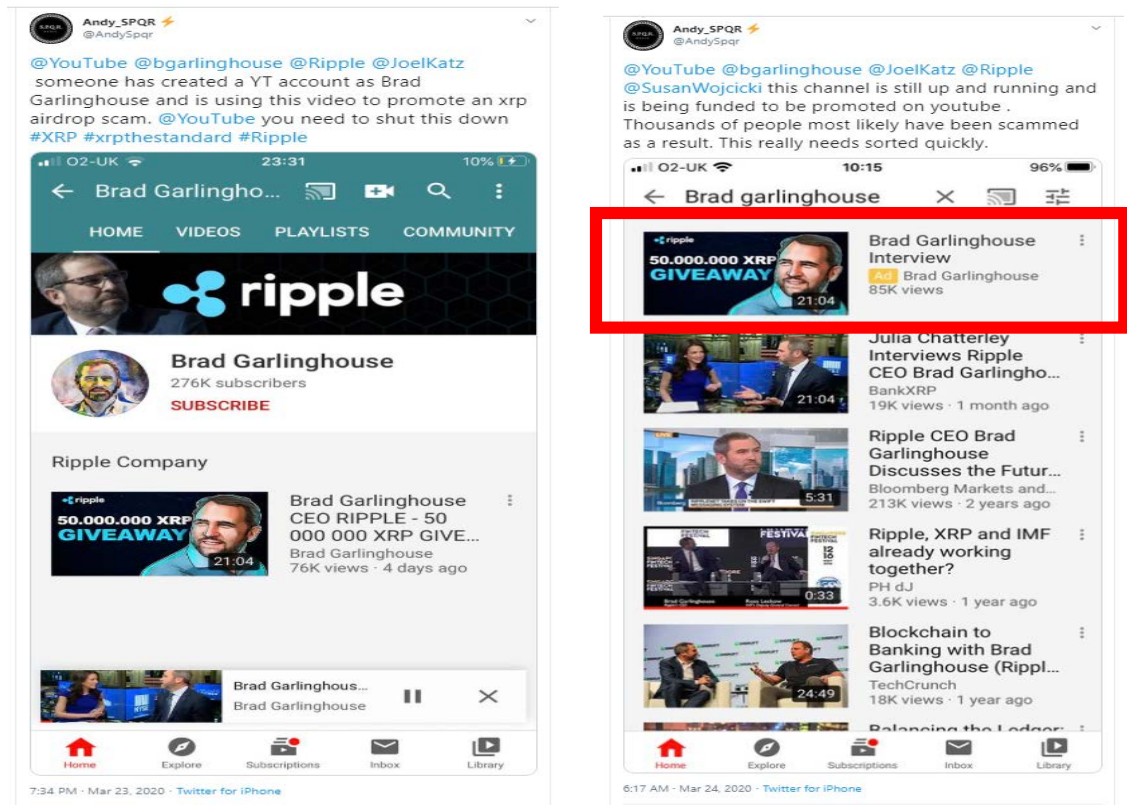
87. As these examples demonstrate, YouTube—despite receiving notice from Ripple of numerous specific instances of trademark infringement—nevertheless routinely took months to remove the offending content. Moreover, YouTube regularly ignored dozens of takedown notices from Ripple that concerned the same instance of the Scam. YouTube’s bias towards inaction, its lengthy delays in removing fraudulent content, and its decision time and again to ignore repeat notices of infringement is entirely unjustifiable.

88. These facts confirm that YouTube’s inaction and delay was not negligent, but purposeful and deliberate—likely a result of YouTube’s desire to profit from the Scam by running fraudulent ads and otherwise monetizing Scam-related content. The source of YouTube’s bias towards inaction is

clear: the longer the fraudulent content remained up on the platform, the greater YouTube's profits. Far from being a victim, YouTube was an active collaborator and partner.

89. Another instance of the Scam—which occurred months after YouTube was put on notice—involves the YouTube channel of popular creator Mesa Sean. Mesa Sean controls a YouTube channel that had, at the time, 282,000 subscribers. On March 31, 2020, hackers took control of Mesa Sean's YouTube channel, changed the name of the channel to "Ripple Foundation," misappropriated Mr. Garlinghouse's image, and began posting videos falsely promoting a fictitious XRP giveaway.⁶

90. In another instance of the Scam dating back to late-March, a scammer hacked or created a YouTube channel named "Brad Garlinghouse" that misappropriated Mr. Garlinghouse's name and image, and began posting videos promoting the Scam. One concerned YouTube user attempted to notify YouTube of this instance of the Scam. Despite this notification, YouTube did not immediately take down the channel, and the next day the same YouTube user was receiving ads—promoted by YouTube through its "video discovery ads"—for a video on this fraudulent channel that already had 85,000 views.

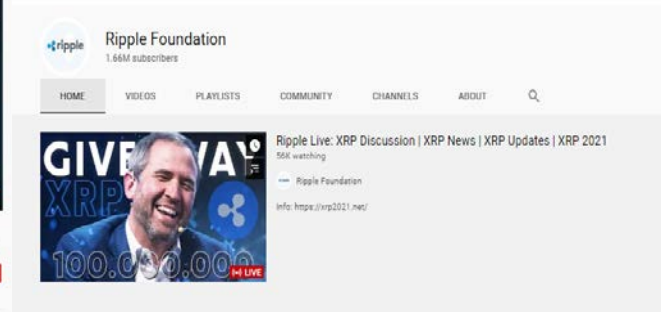
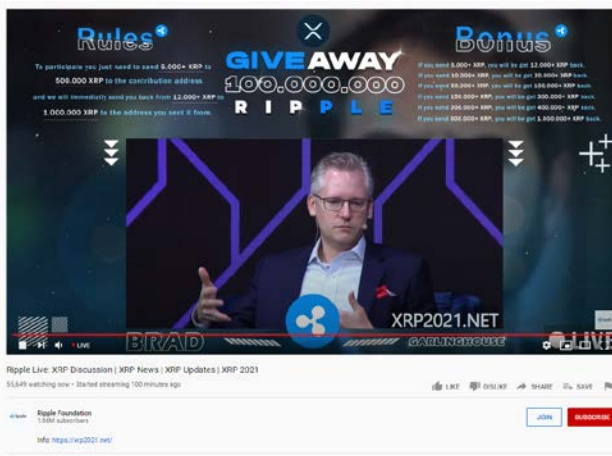


⁶ Mesa Sean (@MesaSean), Twitter (Mar. 31, 2020, 12:32 PM), available at <https://twitter.com/MesaSean/status/1245026128638730241> (last visited Apr. 14, 2020).

G. YouTube has allowed the Scam to thrive even after this lawsuit was filed.

91. Meanwhile, new iterations of the Scam continue to appear on YouTube, often amassing thousands of views and creating more victims by the day. For example, days before the filing of this First Amended Complaint, the following content appeared on YouTube:

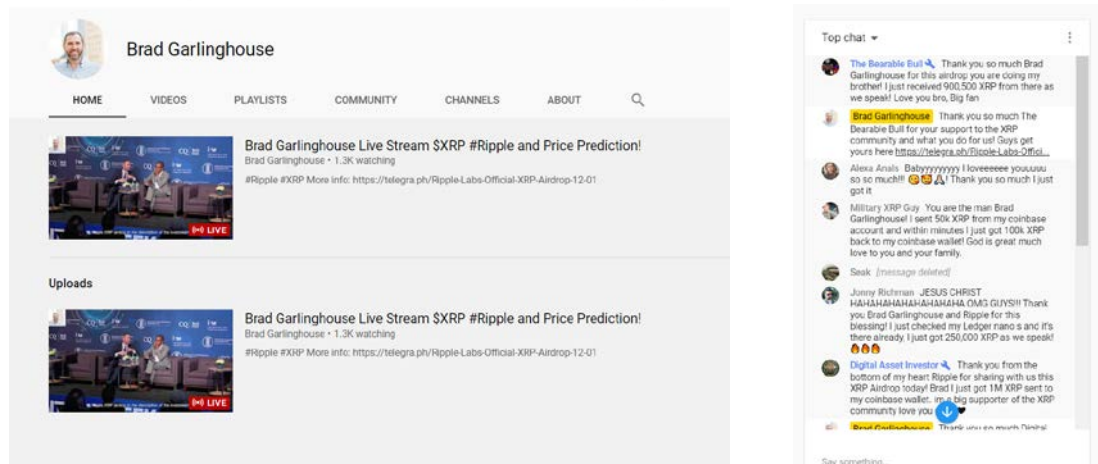
- An account named “Ripple Foundation” with over 1.66 million subscribers started running an instance of the Scam on December 3, 2020. As a result of YouTube’s algorithms, within two hours of posting, the content was being livestreamed by 55,649 YouTube users. The account infringed Ripple’s marks and misappropriated Mr. Garlinghouse’s name and likeness.



- Two similar but distinct instances of the Scam, both posted on December 2, 2020, on channels with 1.25 million and 3.73 million subscribers. As a result of YouTube’s algorithms, within an hour, each of these instances of the Scam had over 70,000 viewers.



- An instance of the Scam, posted on December 1, 2020, wherein a YouTube user took the name “Brad Garlinghouse” and adopted Mr. Garlinghouse’s image as his avatar. With assistance from YouTube’s powerful algorithms, this instance of the Scam attracted over 1,300 simultaneous livestream viewers. The Scam was also promoted in the “live chat” adjacent to the fraudulent content.



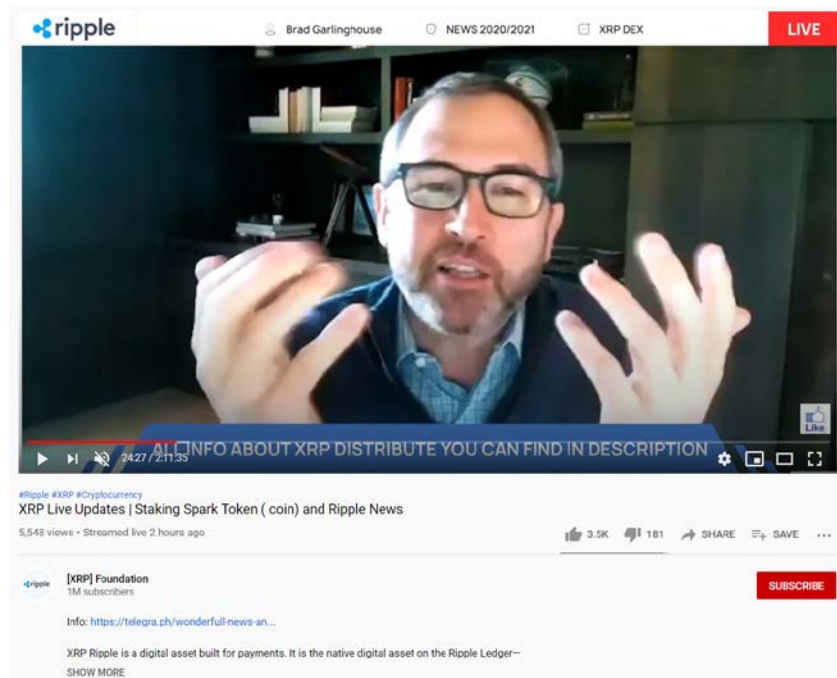
- An instance of the Scam, posted on December 4, 2020, using Mr. Garlinghouse’s name and image, as well as Ripple’s protected marks, to promote the Scam. The video had 15,875 livestream viewers within two hours of posting.



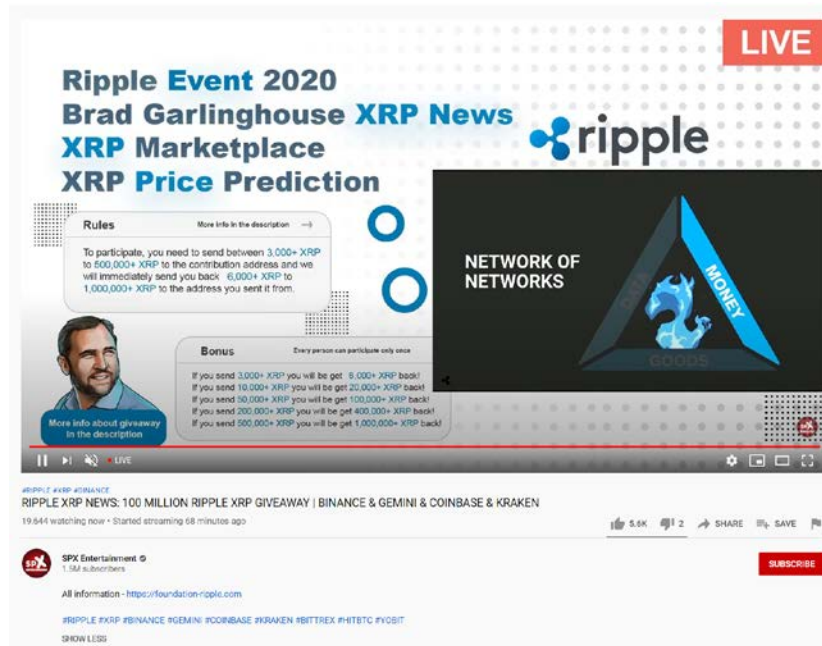
- An instance of the Scam that appeared on YouTube on December 8, 2020, which adopted the misleading name “[Ripple] Corp.” and featured one of Ripple’s protected marks as its avatar. The channel quickly amassed 130,000 subscribers and the Scam-promoting content was viewed by more than 35,000 people within two hours of posting.



- An account with the (false) name “[XRP] Foundation,” which has over one million subscribers, started to promote the Scam on December 9, 2020, and amassed more than 5,000 viewers within a matter of hours.



- An instance of the Scam that appeared on December 10, 2020—the day before this First Amended Complaint was filed—that used Ripple’s marks and Mr. Garlinghouse’s name and likeness to promote the Scam. The channel amassed more than 19,644 livestream viewers in just over an hour.



92. Each instance of the Scam is substantially similar. Therefore, by virtue of Ripple’s voluminous takedown notices (*supra* ¶ 85), the extensive press coverage of the Scam (Ex. 8), and communications from its own creators and users (*id.*; *supra* ¶ 90), YouTube had constructive knowledge of the Scam.

93. Specifically, YouTube possessed a roadmap for identifying which accounts and channels were likely to infringe in the future. Applying this roadmap, YouTube should have known that infringement was likely to occur on *any* account or channel that (1) adopted a name that incorporates Ripple and/or Mr. Garlinghouse; (2) made use of Ripple’s trademarks and Mr. Garlinghouse’s likeness (for example, in their account name or avatar); (3) posted video content relating to Ripple and/or Mr. Garlinghouse; and (4) prominently featured (in the video, comments, or description accompanying the video) keywords such as “XRP” or “Ripple” in combination with “Airdrop” or “Giveaway,” as well as variations thereof.

94. Rather than use its algorithms to amplify the Scam, YouTube could have deployed its robust content moderation tools to prevent the Scam from replicating time and again on its platform.

1 There is no question that YouTube has the capacity to take down any and all accounts that carry the
2 indicia of the Scam. What YouTube lacks is the will to do so.

3 **H. YouTube’s deliberate inaction irreparably harms Ripple’s brand and Mr. Garlinghouse’s**
4 **reputation, and victimizes countless others.**

5 95. YouTube’s deliberate inaction has irreparably harmed—and continues to irreparably
6 harm—Ripple’s brand and Mr. Garlinghouse’s reputation. YouTube’s inaction has also injured
7 countless individuals who fell victim to the Scam. These harms will continue to grow in scope and
8 severity absent intervention by the Court.

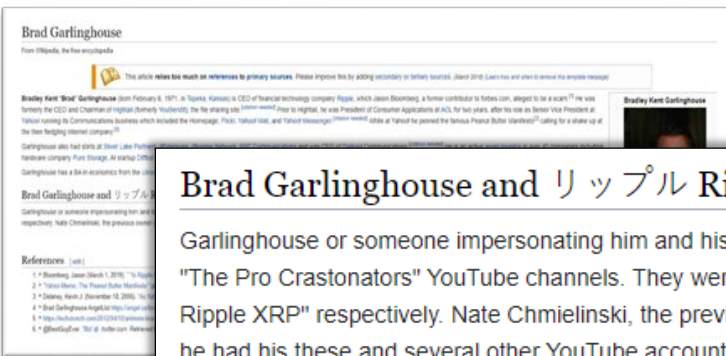
9 96. For the past several months, Ripple has received an onslaught of correspondence from
10 victims demanding that Ripple take responsibility for the Scam, including by making them whole.
11 Many of these messages ascribe culpability for the Scam to Ripple and Mr. Garlinghouse, and otherwise
12 demonstrate the reputational harm at stake:

- 13 • A message asserting that the Scam involves “a youtube page made by Ripple” and that “[o]ur
14 trust over [Ripple] is questioned”;
- 15 • A message emphasizing the threat of “a big SCAM” and warning to “be carefull [sic] [of] your
16 reputation”;
- 17 • A message stating “that these kind of actions and pages [are] hurting your reputation as a
18 company” and that “you as a company should prevent these fraudulences”;
- 19 • A message stating the Scam “is becoming an epidemic,” warning that the Ripple name will get
20 “hurt,” and accusing that “[n]othing is getting done about it, as more victims pile up”;
- 21 • A message reporting a loss of XRP, noting that the Scam “cannot be good for the brand,” and
22 demanding Ripple “take corrective action”;
- 23 • A message asking if Ripple “tolerate[s] false accounts” before proclaiming that “Ripple itself is
24 not reliable”;
- 25 • A message notifying Ripple of a hacked YouTube channel and stating that “many people are
26 blaming your company for hacking other user’s accounts”; and
- 27 • A message accusing Ripple and Mr. Garlinghouse of being the entities responsible for the
28 hacking of popular YouTube channels.
- A message to Ripple stating “[y]ou hacked my YouTube channel . . . to promote your products,”
and referring to Ripple as a “nasty business.”

97. There are many more examples of similar messages. There are messages threatening legal action against Ripple and others contacting Ripple to confirm whether the fictional “giveaway” is legitimate.

98. Regrettably, the Scam’s collateral damage extends far beyond Ripple’s brand and reputation. The Scam has also inflicted a substantial reputational injury on Mr. Garlinghouse, which grows worse by the day.

99. For example, in February, Mr. Garlinghouse’s Wikipedia page prominently featured a discussion of the Scam, a fact that at once illustrates and reinforces to Wikipedia’s billions of users the false notion that Mr. Garlinghouse is associated with the Scam.



Brad Garlinghouse and リップル Ripple XRP YouTube Channels

Garlinghouse or someone impersonating him and his company recently took over the "BestGuyEver" and "The Pro Crastonators" YouTube channels. They were renamed as "Brad Garlinghouse" and "リップル Ripple XRP" respectively. Nate Chmielinski, the previous owner of the two channels, alleged on twitter that he had his these and several other YouTube accounts hacked.^[8]

100. Separately, Mr. Garlinghouse has also received numerous personal inquiries from individuals asking him to confirm or clarify his affiliation with the Scam. These requests and false associations became so typical that Mr. Garlinghouse was compelled to address them publicly:



101. More recently, Mr. Garlinghouse has received death threats from victims of the Scam who (again, wrongly) are convinced that he and Ripple are responsible for the Scam, when they are anything but.

102. The harm to Ripple's brand and Mr. Garlinghouse's reputation is irreparable and unquantifiable. YouTube's continued refusal to timely address the fraud perpetrated on its platform can and must be stopped.

CLAIMS FOR RELIEF

FIRST CLAIM FOR RELIEF

Direct Trademark Infringement

15 U.S.C. § 1114(1)

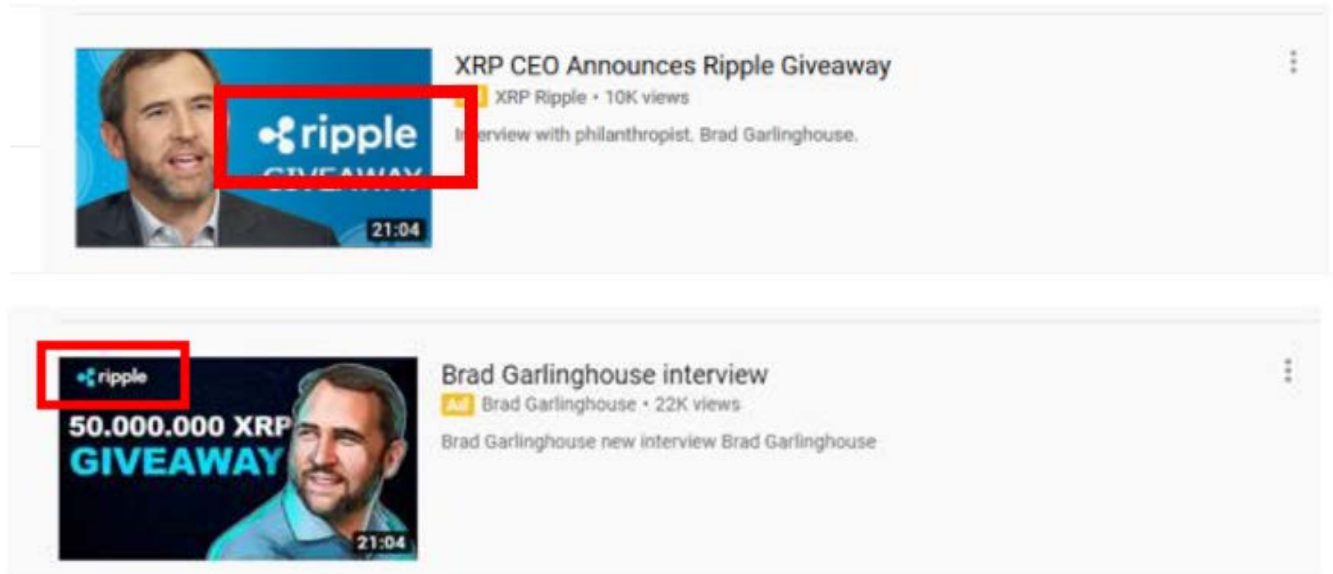
103. Plaintiffs repeat and re-allege all allegations contained in paragraphs 1 through 102, inclusive, as though fully set forth herein.

104. Ripple owns several highly valuable trademarks, including, but not limited to, "Ripple," "Ripple Labs," and the company's distinctive triskelion logo, which consists of three connected circles. These marks are registered and they are strong. Ripple's marks define the company's identity and are at the core of how the company represents itself to the public.

105. YouTube used Ripple's protected marks, without consent, in its algorithmic approach to recommending and promoting the Scam to users who YouTube knew would engage with the content. Specifically, YouTube's algorithm uses key words—in this case, Ripple's protected marks such as "Ripple" and "Ripple Labs"—to target Scam videos to unsuspecting YouTube users.

106. Separately, YouTube collaborated with unknown third parties to create, promote, and profit from fraudulent ads that featured Ripple's protected marks and promoted the Scam. YouTube did so without Ripple's consent. The Scam—which promoted a fictitious giveaway of XRP—is proximate to Ripple's actual business, which is to provide enterprise blockchain solutions that seek to take advantage of XRP and the XRP Ledger's unique characteristics.

107. In the process, YouTube used Ripple’s protected marks in various ways. First, YouTube generated thumbnail images that prominently featured Ripple’s protected marks for use in ads to promote the Scam. YouTube also designed the ads to prominently feature the entity that paid for the ad, which likewise often infringed on Ripple’s marks (e.g., “XRP Ripple”). The marks used in these fraudulent ads were not just similar to Ripple’s protected marks—they were identical. For example:



108. Second, YouTube optimized the ads—a process which made use of Ripple’s protected marks—to ensure that the ads would be presented to YouTube users who were most susceptible to falling victim to the scam. And, third, YouTube linked the fraudulent ads to keywords such as “Ripple” and “Ripple Labs,” which are themselves examples of Ripple’s protected marks.

109. Because YouTube’s use of Ripple’s protected marks in connection with the fraudulent ads occurred on the internet and because these ads were displayed to individuals in a variety of states, YouTube used Ripple’s marks in interstate commerce. Moreover, because YouTube used Ripple’s marks in advertisements that promoted a fraudulent distribution of XRP, YouTube’s use of the marks was in connection with the sale, distribution, or advertising of goods and services.

110. YouTube’s use of Ripple’s protected marks was intended to deceive. Moreover, YouTube’s use of the marks was likely to cause, and in fact caused, significant confusion, as evidenced by the large number of victims claimed by the Scam and the voluminous communications from victims received by Ripple and Mr. Garlinghouse wrongly blaming them for their involvement.

1 111. Ripple is a technology company that regularly utilizes the internet, including social media
2 platforms such as YouTube, to promote its products. For example, Ripple has an official page on
3 YouTube that features legitimate content relating to the company and its business.

4 112. By using Ripple's protected marks to create, promote, and profit from fraudulent ads that
5 promote the Scam, YouTube directly infringes on Ripple's protected marks.

6 **SECOND CLAIM FOR RELIEF**

7 ***Contributory Trademark Infringement***

8 **15 U.S.C. § 1114(1)**

9 113. Plaintiffs repeat and re-allege all allegations contained in paragraphs 1 through 112,
10 inclusive, as though fully set forth herein.

11 114. Scammers have created fake accounts and/or used hacked accounts to infringe Ripple's
12 valid and protected trademarks. These fake and/or hacked accounts and their channels prominently
13 display Ripple's trademarks, so that the accounts falsely and misleadingly present to YouTube users as
14 official Ripple accounts.

15 115. These fake and/or hacked accounts display and use—and therefore infringe upon—
16 several of Ripple's protected trademarks, including "Ripple," "Ripple Labs," and Ripple's triskelion
17 logo. The trademarks often accompany CEO Brad Garlinghouse's name and likeness and Ripple-related
18 videos, such as interviews of Mr. Garlinghouse or other Ripple executives. The use of Ripple's
19 trademarks and Mr. Garlinghouse's likeness in these accounts has caused customer confusion. This
20 confusion has led individuals to fall victim to the Scam because they (erroneously) understood these
21 accounts to be legitimate and formally affiliated with Ripple. This confusion will continue absent a
22 court order.

23 116. YouTube generates revenue from the infringing conduct, continuing to do so even after it
24 was informed of the Scam. YouTube has sold—and presumably is continuing to sell—paid ads that
25 infringe on Ripple's marks. When a YouTube user clicks on such a "video discovery ad," he or she is
26 taken directly to a YouTube channel that is running the Scam. YouTube thus profits from the
27 infringement of Ripple's marks.

1 117. YouTube had *actual knowledge of specific instances* of trademark infringement but
2 failed to take timely remedial action. YouTube had actual knowledge of hundreds of instances of
3 Scam-related infringement because Ripple has sent YouTube more than 1,000 trademark-related
4 takedown demands. Yet many of these accounts—which YouTube knew were actively infringing on
5 Ripple’s trademarks—nevertheless continued to infringe for many months, despite repeated trademark-
6 related notices (sometimes as many as 18 for a single instance of infringement).

7 118. Moreover, YouTube also had and currently has *constructive knowledge over all*
8 *instances of Scam-related infringement* because YouTube has specific, contemporary knowledge over
9 which accounts and channels are likely to infringe on Ripple’s marks. YouTube has a roadmap for
10 identifying such accounts: accounts that use Ripple’s marks while impersonating Ripple and/or Mr.
11 Garlinghouse and posting Ripple-related video content that promotes an “XRP Giveaway.” YouTube
12 possesses this roadmap by virtue of (1) having received more than 1,000 trademark-related takedown
13 notices that Ripple has sent; (2) having read varied media sources that have publicly reported that
14 YouTube hosts fake Ripple accounts that infringe on Ripple’s trademarks; and (3) having received
15 communications from YouTube’s own users and creators who have been victimized by the Scam,
16 alerted YouTube, and then have received responses from YouTube employees.

17 119. YouTube directly controls and monitors the instrumentality used by Scammers to
18 infringe Ripple’s trademarks. That instrumentality is the YouTube platform, which hosts, displays,
19 filters, and develops in part the infringing accounts and videos.

20 120. YouTube can and regularly does remove accounts, channels, and videos from its platform
21 for trademark infringement.

22 121. YouTube monitors its platform for trademark infringement through algorithms and
23 human review.

24 122. Despite its knowledge and ability to ban trademark infringers and remove infringing
25 content, YouTube continues to provide its platform and services to the Scammers.

26 123. YouTube thus is liable for contributory trademark infringement under Lanham Act § 32,
27 15 U.S.C. § 1114(1).
28

124. Plaintiff seeks injunctive relief to halt YouTube’s contributory infringement, which irreparably harms Plaintiffs and has no adequate remedy at law. Plaintiffs also request any and all available damages.

THIRD CLAIM FOR RELIEF

Statutory and Common Law Misappropriation of the Right of Publicity

Cal. Civil Code § 3344

125. Plaintiffs repeat and re-allege all allegations contained in paragraphs 1 through 124, inclusive, as though fully set forth herein.

126. The Scam was and remains rampant on YouTube. The Scam involves the impersonation of Ripple’s CEO, Mr. Garlinghouse. To effectuate this impersonation, YouTube channels and accounts use—and thereby misappropriate—Mr. Garlinghouse’s likeness, name, and image.

127. YouTube uses Mr. Garlinghouse’s likeness in a variety of ways.

128. First, YouTube collaborated with third parties to create, optimize, and profit from fraudulent ads that promoted the Scam. These ads featured Mr. Garlinghouse’s name and image. While optimizing the ads—i.e., presenting them to YouTube users who are most likely to engage with it—YouTube’s algorithm made use of Mr. Garlinghouse’s name, image, and likeness in order to identify and understand which users should be targeted with the ad.

129. Second, YouTube verified accounts and channels that were engaged in the Scam. For example, YouTube awarded a verification badge to an account that was actively promoting the Scam. In making this erroneous determination of authenticity—i.e., that the fraudulent account was the “official account” of Ripple and/or Mr. Garlinghouse—YouTube necessarily used Mr. Garlinghouse’s name, image, and likeness.

130. A verification badge communicates, among other things, that a channel “represent[s] the real creator, brand, or entity it claims to be” because YouTube has “check[ed] different factors to help verify [the channel owner’s] identity.” Ex. 10. Through this communicative conduct, YouTube is responsible for the creation, development, and presentation of new content and information to its users.

131. Third, each instance of the Scam involves video content relating to Mr. Garlinghouse. These accounts routinely adopt channel names that incorporate Mr. Garlinghouse’s name and utilize a

1 picture of Mr. Garlinghouse as their avatar images. YouTube's algorithm then uses these data points—
2 i.e., Mr. Garlinghouse's name and his picture—to recommend this Scam content to YouTube users who
3 are most likely to be interested (for example, users who have, in the past, searched for "Ripple").
4 YouTube's algorithm also utilizes this data in its search functionality. Thus, when a YouTube user
5 searches for "XRP," "Ripple" or "Ripple Labs," YouTube's algorithm uses Mr. Garlinghouse's name
6 and likeness to locate and then return a list of results that include channels and accounts promoting the
7 Scam.

8 132. Mr. Garlinghouse has not consented to YouTube's use of his likeness on any of these
9 accounts and channels. And Mr. Garlinghouse and/or his agents have informed YouTube of his non-
10 consent.

11 133. Many media sources have publicly reported that hacked YouTube accounts have
12 appropriated Mr. Garlinghouse's likeness.

13 134. YouTube thus knows that the operators of accounts that promote the Scam are violating
14 Mr. Garlinghouse's right to publicity.

15 135. YouTube has thus violated, and continues to violate, Mr. Garlinghouse's right of
16 publicity under both California Civil Code § 3344(a) and the common law.

17 136. This ongoing violation irreparably harms Mr. Garlinghouse's reputation and Ripple's
18 goodwill, which Plaintiffs have been committed to protecting and developing.

19 137. The irreparable harm to Mr. Garlinghouse's reputation is evidenced by victim complaints
20 (including death threats), news articles, and false associations suggested on Wikipedia, amongst other
21 sources.

22 138. Plaintiffs thus seek injunctive relief to halt this irreparable harm, for which there is no
23 adequate remedy at law.

24 139. Plaintiffs also request any and all available damages.
25
26
27
28

FOURTH CLAIM FOR RELIEF

Violations of California's Unfair Competition Law

California Business & Professions Code § 17200

140. Plaintiffs repeat and re-allege all allegations contained in paragraphs 1 through 139, inclusive, as though fully set forth herein.

141. YouTube engages in direct and contributory trademark infringement and violations of the statutory and common law rights of publicity. These are each unlawful business practices under California Business and Professions Code § 17200.

142. By affirmatively and directly contributing to, accelerating, and profiting from a Scam designed to defraud, YouTube has also engaged in fraudulent business practices under § 17200.

143. The hacked accounts commit fraud by soliciting people to send XRP to a virtual currency wallet in exchange for a benefit that does not materialize.

144. YouTube knows these accounts commit fraud because it has seen media reports, and has received takedown demands from Ripple and from YouTube users and creators.

145. Additionally, YouTube gave substantial assistance or encouragement to the Scam by selling “video discovery ads” that directly infringe on Ripple’s protected marks and/or misappropriate Mr. Garlinghouse’s likeness. By selling such ads, YouTube ensures that more YouTube users will engage with accounts that promote the Scam, thereby increasing the Scam’s reach.

146. For example, YouTube has vouched for at least one hacked account by awarding its channel a verification badge. This communicated to YouTube’s vast viewership that the channel was an authentic and official channel belonging to Ripple and/or Mr. Garlinghouse. This promoted the false belief that verified YouTube accounts promoting the Scam could be trusted.

147. YouTube’s conduct also constitutes unfair business practices under § 17200.

148. YouTube’s unlawful, fraudulent, and unfair business practices irreparably harm Plaintiffs, who seek injunctive relief because there is no adequate remedy at law, and because an injunction “may be necessary to prevent the use or employment by any person of any practice which constitutes unfair competition.” Cal. Bus. & Prof. Code § 17203.

149. Plaintiffs further seek any and all available damages awards, including restitution.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs pray for the following relief:

A. For injunctive relief, as follows: A preliminary and permanent injunction enjoining and restraining Defendant YouTube, and all persons or entities in concert with them, during the pendency of this action and perpetually thereafter from:

1. Violating and providing assistance in violation of the Lanham Act, in connection with Ripple's protected marks;

2. Refusing to apply its content regulation and moderation screening tools to prevent the Scam from being perpetuated;

3. Ignoring and delaying its response(s) to takedown notices concerning the Scam;

4. Profiting from the Scam in any manner, including through the receipt of monies for paid advertisements and/or through the delivery of advertisements to accounts and channels that infringe on Ripple's marks;

5. Verifying accounts perpetuating the Scam;

6. Awarding fraudulent channels verification badges; and

7. Violating and providing assistance in the violation of Mr. Garlinghouse's right of publicity, in connection with accounts or channels perpetuating the Scam.

B. An award to Plaintiffs of damages, including but not limited to, compensatory, statutory, and punitive damages, as permitted by law and in such amounts to be proven at trial.

C. For a recovery in restitution equal to any unjust enrichment enjoyed by Defendant YouTube.

D. An award to Plaintiffs of reasonable costs, including reasonable attorneys' fees.

E. For pre- and post-judgment interest as allowed by law.

F. For any such other relief as the Court may deem just and proper.

Dated: December 11, 2020

Respectfully Submitted,

By: /s/ Menno Goedman

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*Attorneys for Plaintiffs Ripple Labs Inc.
and Bradley Garlinghouse*

EXHIBIT 1

Spam, deceptive practices and scams policies



YouTube doesn't allow spam, scams or other deceptive practices that take advantage of the YouTube community. We also don't allow content where the main purpose is to trick others into leaving YouTube for another site.

If you find content that violates this policy, please report it. Instructions for reporting violations of our Community Guidelines [are available here](#). If you find many videos, comments or a creator's entire channel that you wish to report, visit our [reporting tool](#).

What these policies mean for you


If you're posting content

Don't post content on YouTube if it fits any of the descriptions noted below.

- **Video spam:** Content that is excessively posted, repetitive or untargeted and does one or more of the following:
 - Promises viewers that they'll see something but instead directs them off site.
 - Gets clicks, views or traffic off YouTube by promising viewers that they'll make money fast.
 - Sends audiences to sites that spread malware or try to gather personal information, or other sites that have a negative impact.
- **Misleading metadata or thumbnails:** Using the title, thumbnail, description or tags to

YouTube policies

- ☑ Spam, deceptive practices and scams policies
- ☑ Policy on impersonation
- ☑ Links in your content
- ☑ Fake Engagement Policy
- ☑ Additional policies



Make compelling thumbnails

Get [pro tips](#) on how to make effective titles and thumbnails and avoid clickbait.

promises viewers that they'll see something but instead directs them off site.

- Gets clicks, views or traffic off YouTube by promising viewers that they'll make money fast.
- Sends audiences to sites that spread malware or try to gather personal information, or other sites that have a negative impact.
- **Misleading metadata or thumbnails:** Using the title, thumbnails, description or tags to trick users into believing that the content is something that it is not.
- **Manipulated media:** Content that has been technically manipulated or doctored in a way that misleads users (beyond clips taken out of context) and may pose a serious risk of egregious harm.
- **Scams:** Content offering cash gifts, 'get rich quick' schemes or pyramid schemes (sending money without a tangible product in a pyramid structure).
- **Voter suppression:** Content aiming to mislead voters about the time, place, means or eligibility requirements for voting.
- **Suppression of Census Participation:** Content aiming to mislead participants about the time, means or eligibility requirements for participating in a census.
- **Candidate eligibility:** Content that advances false claims related to the technical eligibility requirements for current political candidates and sitting elected government officials to serve in office. Eligibility requirements considered are based on applicable national law, and include age, citizenship or vital status.
- **Incentivisation spam:** Content that sells engagement metrics such as views, likes, comments or any other metric on YouTube. This also includes content where the only purpose is to boost subscribers, views or other metrics (e.g. offering to subscribe to another creator's channel solely in exchange for them subscribing to your channel, also known as 'sub4sub' content).
- **Comments spam:** Comments where the sole purpose is to gather personal information from viewers, misleadingly drive viewers off YouTube or perform any of the prohibited behaviours noted above.
- **Repetitive comments:** Leaving large amounts of identical, untargeted or repetitive comments.
- **Live stream abuse:** Live streams intended to stream content that belongs to somebody else and are not corrected following repeated warnings of possible abuse. Live streams should be actively monitored by the channel owner, and any potential issues should be corrected in a timely manner.

This policy applies to videos, video descriptions, comments, live streams and any other YouTube product or feature. Keep in mind that this isn't a complete list.

Note: You're allowed to encourage viewers to subscribe, hit the like button, share or leave a comment.

Examples

Here are some examples of content that's not allowed on YouTube.

- Telling viewers that they can vote through fake methods like texting their vote to a particular number
- Giving made-up voter eligibility requirements like saying that a particular election is only open to voters over 50 years old
- Deliberately telling viewers an incorrect election date

More examples

Video spam

YouTube policies

- Spam, deceptive practices and scams policies
- Policy on impersonation
- Links in your content
- Fake Engagement Policy
- Additional policies



Make compelling thumbnails

Get [pro tips](#) on how to make effective titles and thumbnails and avoid clickbait.

More examples

Video spam

The following types of content are not allowed on YouTube. This isn't a complete list.

- Content that promises viewers that they'll watch something but instead directs them off site to view.
- Posting the same content repeatedly across one or more channels.
- Massively uploading content that you scraped from other creators.
- Trying to get viewers to install malware, or directing them to sites that might compromise their privacy.
- Auto-generated content that computers post quickly without regard for quality or viewer experience.
- Promising money, products, software or gaming perks for free if viewers install software, download an app or perform other tasks.
- Massively posting affiliate content in dedicated accounts.

Misleading metadata or thumbnails

The following types of content are not allowed on YouTube. This isn't a complete list.

- Placing excessive tags in the video description ('tag stuffing') rather than placing them as tags upon upload.
- A thumbnail with a picture of a popular celebrity that has nothing to do with the content.
- Using the title, thumbnails, description or tags to trick users into believing the content is something it is not, especially when there is a serious risk of egregious real world harm.

Manipulated Media

The following types of content are not allowed on YouTube. This isn't a complete list.

- Inaccurately translated video subtitles that inflame geopolitical tensions creating serious risk of egregious harm.
- Videos that have been technically manipulated (beyond clips taken out of context) to make it appear that a government official is dead.
- Video content that has been technically manipulated (beyond clips taken out of context) to fabricate events where there is a serious risk of egregious harm.
- Misattributing a 10-year-old video that depicts stuffing of a ballot box to a recent election.

Voter Suppression and Suppression of Census Participation

The following types of content are not allowed on YouTube. This isn't a complete list.

YouTube policies

- Spam, deceptive practices and scams policies
- Policy on impersonation
- Links in your content
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- Additional policies



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Voter Suppression and Suppression of Census Participation

The following types of content are not allowed on YouTube. This isn't a complete list.

- Telling viewers they can vote through inaccurate methods like texting their vote to a particular number.
- Giving made up voter eligibility requirements like saying that a particular election is only open to voters over 50 years old.
- Telling viewers an incorrect voting date.
- Giving incorrect instructions on how to participate in the census.

Candidate Eligibility

The following types of content are not allowed on YouTube. This isn't a complete list.

- Claims that a candidate or sitting government official is not eligible to hold office based on false information about the age required to hold office in that country.
- Claims that a candidate or sitting government official is not eligible to hold office based on false information about citizenship status requirements to hold office in that country.
- Claims that a candidate or sitting government official is ineligible for office based on false claims that they're deceased, not old enough or otherwise do not meet eligibility requirements.

Scams

The following types of content are not allowed on YouTube. This isn't a complete list.

- Making exaggerated promises, such as claims that viewers can get rich fast or that a miracle treatment can cure chronic illnesses such as cancer.
- Promoting cash gifting or other pyramid schemes.
- Accounts dedicated to cash gifting schemes.
- Videos that promise 'You'll make \$50,000 tomorrow with this plan!'

Incentivisation spam

The following types of content are not allowed on YouTube. This isn't a complete list.

- Videos where the purpose is to encourage viewers to subscribe.
- 'Subs 4 Subs' videos.
- Videos that offer 'likes' for sale.
- A video that offers to give the channel to the 100,000th subscriber without any other content.

Comments spam

YouTube policies

- Spam, deceptive practices and scams policies
- Policy on impersonation
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- Additional policies



Make compelling thumbnails

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any other content.

Comments spam

The following types of content are not allowed on YouTube. This isn't a complete list.

- Comments about surveys or giveaways that promote pyramid schemes.
- 'Pay per click' referral links in comments.
- Comments that falsely claim to offer full video content. This could be content like movies, TV shows or concerts.
- Posting links to malware or phishing site in comments: 'omg just got tons of Bucks from here! – [xyz phishing site].com'
- Comments with links to counterfeit shops.
- 'Hey guys, check out my channel/video here!!' when the channel/video has nothing to do with the video it was posted in.
- Posting the same comment repeatedly with a link to your channel.

Live stream abuse

The following types of content are not allowed on YouTube. This isn't a complete list.

- Using your phone to stream a television show
- Using third-party software to live stream songs from an album

Remember that these are just some examples. Don't post content if you think that it might violate this policy.

What happens when content violates this policy

If your content violates this policy, we'll remove the content and send you an email to let you know. If this is the first time that you've posted content that violates our Community Guidelines, you'll get a warning with no penalty to your channel. If it's not, we'll issue a strike against your channel. Your channel will be terminated if you receive three strikes. You can learn more about [our strikes system here](#).

Visit Creator Academy for more

Would you rather learn about this policy through videos and quizzes? Take a look at our [Creator Academy course](#).

Was this helpful?

Yes

No

YouTube policies

- Spam, deceptive practices and scams policies
- Policy on impersonation
- Links in your content
- Fake Engagement Policy
- Additional policies



Make compelling thumbnails

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Document title: Spam, deceptive practices and scams policies - YouTube Help

Capture URL: <https://support.google.com/youtube/answer/2801973?hl=en-GB>

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Capture timestamp (UTC): Mon, 09 Mar 2020 15:46:18 GMT

Capture tool: v6.13.15

Collection server IP: 54.174.78.137

Browser engine: Chrome/70.0.3538.77

Operating system: Microsoft Windows NT 10.0.14393.0 (10.0.14393.0)

PDF length: 6

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User: pagevault-steve

EXHIBIT 2

TrueView video discovery ads

How TrueView video discovery ads work

TrueView video discovery ads can run on the YouTube search results and watch pages for both desktop and m.youtube.com, as well as the mobile app homepage. The ad unit consists of an image thumbnail and up to three lines of text. Clicking the ad will deliver a user to the YouTube watch or channel page to view the video rather than playing the video within the ad unit itself.

TrueView video discovery ads appear differently, depending on where they run:

YouTube search results

TrueView video discovery ads appear on YouTube search results alongside organic search results. The ad contains a thumbnail, headline, channel name and video view count.



The top-ranked ad may also be repeated below the organic search results

YouTube video watch page









Video discovery ads can appear on watch pages in these different positions:

1. In the related video section as a unit that contains a thumbnail, headline, channel name and video view count.
2. As an overlay on the video. Overlays look the same on the YouTube watch page and on embedded players.



YouTube mobile apps homepage

Help

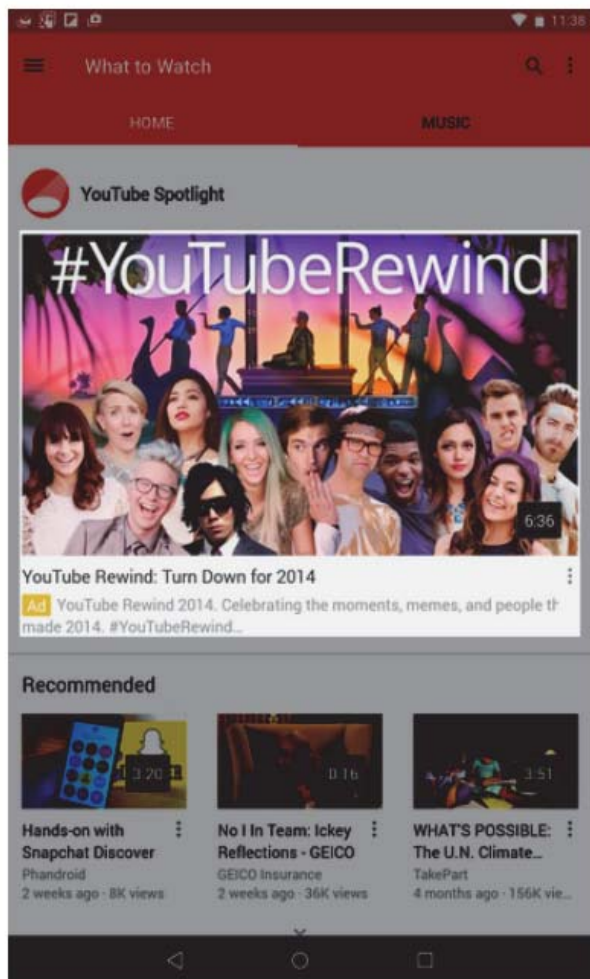
-  YouTube Masthead
-  Video Ads (formerly in-stream video ads)
-  TrueView in-stream ads
-  TrueView video discovery ads
-  Standard Display Ads
-  In-video Overlay Ads
-  Live Streaming in Ads
-  Industry Standards for measuring video impressions/viewability

YouTube mobile apps homepage

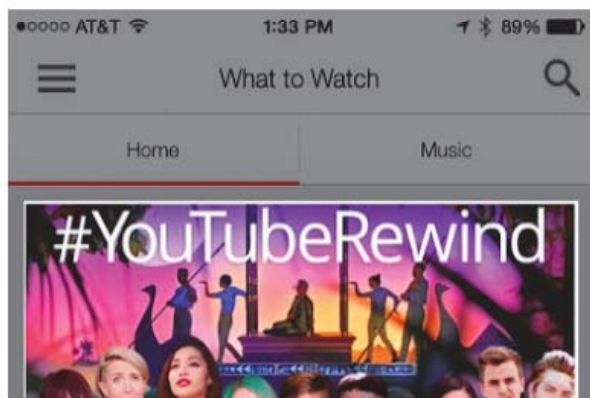


TrueView video discovery ads can appear on the homepage of the Android and iOS YouTube app on days when the mobile video masthead is not sold.

Android (Portrait)

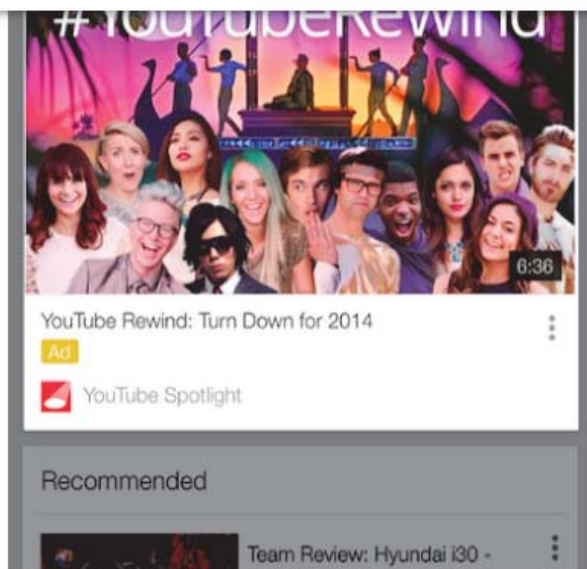


iOS (Portrait)



Help

- YouTube Masthead
- Video Ads (formerly in-stream video ads)
- TrueView in-stream ads
- TrueView video discovery ads
- Standard Display Ads
- In-video Overlay Ads
- Live Streaming in Ads
- Industry Standards for measuring video impressions/viewability

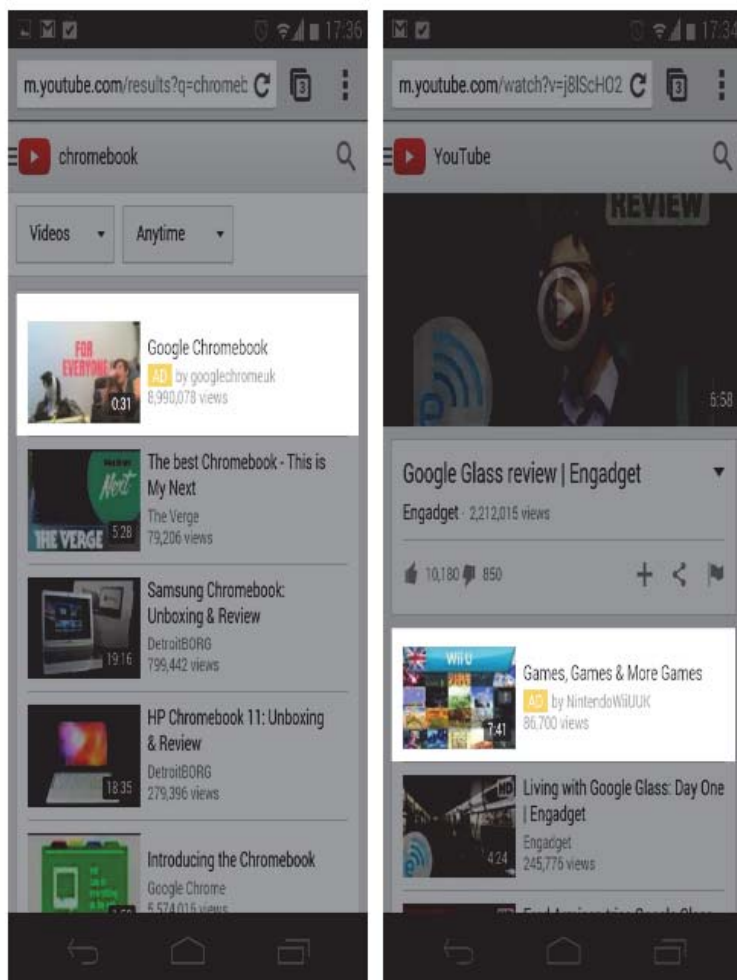


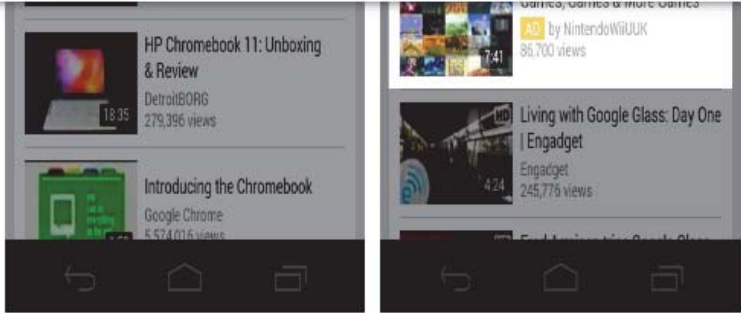
Help

- YouTube Masthead
- Video Ads (formerly in-stream video ads)
- TrueView in-stream ads
- TrueView video discovery ads
- Standard Display Ads
- In-video Overlay Ads
- Live Streaming in Ads
- Industry Standards for measuring video impressions/viewability

YouTube Mobile Web search and watch pages

Video discovery ads can appear on the YouTube mobile search and watch pages as a promoted video in the top related video slot for high end devices.





Assets overview

Asset name	Description
Video URL	Video must be uploaded to YouTube
Image	Choose from 4 auto-generated thumbnails To implement custom thumbnails, contact your Google representative
Headline text	25 characters max (any more than 25 will be truncated on some devices)
Description	Two lines 35 characters max each Description is not shown in Suggestions

In order to create a TrueView video discovery ad, videos must be [public](#) or [unlisted](#). All ads must must comply with the [YouTube Advertising Policies](#).

Video ad settings

File format: AVI, ASF, Quicktime, Windows Media, MP4, or MPEG

Preferred video codec: H.264, MPEG-2, or MPEG-4

Preferred audio codec: MP3 or AAC

Resolution: 640x360 (16:9) or 480x360 (4:3) recommended

Frame rate: 30 FPS









Aspect ratio: Native aspect ratio without letter-boxing (examples: 4:3, 16:9)

Maximum file size: 1 GB

Reporting metrics

- Impressions
- Clicks
- Views

Help

-  YouTube Masthead
-  Video Ads (formerly in-stream video ads)
-  TrueView in-stream ads
-  TrueView video discovery ads
-  Standard Display Ads
-  In-video Overlay Ads
-  Live Streaming in Ads
-  Industry Standards for measuring video impressions/viewability



Document title: TrueView video discovery ads - Display Specs Help

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Capture tool: v6.13.15

Collection server IP: 54.174.78.137

Browser engine: Chrome/70.0.3538.77

Operating system: Microsoft Windows NT 10.0.14393.0 (10.0.14393.0)

PDF length: 5

Capture ID: 52854c6d-6e52-4a10-a665-0bcd07dde82e

User: pagevault-steve

EXHIBIT 3

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2019
OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____.

Commission file number: **001-37580**

Alphabet Inc.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

61-1767919

(I.R.S. Employer Identification No.)

1600 Amphitheatre Parkway
Mountain View, CA 94043

(Address of principal executive offices, including zip code)

(650) 253-0000

(Registrant's telephone number, including)

Securities registered pursuant to Section 12(b) of the Act:

<u>Title of each class</u>	<u>Trading Symbol(s)</u>	<u>Name of each exchange on which registered</u>
Class A Common Stock, \$0.001 par value	GOOGL	Nasdaq Stock Market LLC (Nasdaq Global Select Market)
Class C Capital Stock, \$0.001 par value	GOOG	Nasdaq Stock Market LLC (Nasdaq Global Select Market)

Securities registered pursuant to Section 12(g) of the Act:

Title of each class

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
Emerging growth company	<input type="checkbox"/>		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of June 28, 2019, the aggregate market value of shares held by non-affiliates of the registrant (based upon the closing sale prices of such shares on the Nasdaq Global Select Market on June 28, 2019) was approximately \$663.0 billion. For purposes of calculating the aggregate market value of shares held by non-affiliates, we have assumed that all outstanding shares are held by non-affiliates, except for shares held by each of our executive officers, directors and 5% or greater stockholders. In the case of 5% or greater stockholders, we have not deemed such stockholders to be affiliates unless there are facts and circumstances which would indicate that such stockholders exercise any control over our company, or unless they hold 10% or more of our outstanding common stock. These assumptions should not be deemed to constitute an admission that all executive officers, directors and 5% or greater stockholders are, in fact, affiliates of our company, or that there are not other persons who may be deemed to be affiliates of our company. Further information concerning shareholdings of our officers, directors and principal stockholders is included or incorporated by reference in Part III, Item 12 of this Annual Report on Form 10-K.

As of January 27, 2020, there were 299,895,185 shares of the registrant's Class A common stock outstanding, 46,411,073 shares of the registrant's Class B common stock outstanding, and 340,979,832 shares of the registrant's Class C capital stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Proxy Statement for the 2020 Annual Meeting of Stockholders are incorporated herein by reference in Part III of this Annual Report on Form 10-K to the extent stated herein. Such proxy statement will be filed with the Securities and Exchange Commission within 120 days of the registrant's fiscal year ended December 31, 2019.

Alphabet Inc.
Form 10-K
For the Fiscal Year Ended December 31, 2019

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NOTE ABOUT FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These statements include, among other things, statements regarding:

- the growth of our business and revenues and our expectations about the factors that influence our success and trends in our business;
- the potential for declines in our revenue growth rate and operating margin;
- our expectation that the shift from an offline to online world will continue to benefit our business;
- our expectation that the portion of our revenues that we derive from non-advertising revenues will continue to increase and may affect our margins;
- our expectation that our traffic acquisition costs (TAC) and the associated TAC rates will fluctuate, which could affect our overall margins;
- our expectation that our monetization trends will fluctuate, which could affect our revenues and margins;
- fluctuations in our revenue growth, as well as the change in paid clicks and cost-per-click on Google properties and the change in impressions and cost-per-impression on Google Network Members' properties, and various factors contributing to such fluctuations;
- our expectation that we will continue to periodically review, refine, and update our methodologies for monitoring, gathering, and counting the number of paid clicks on Google properties and impressions on Google Network Members' properties;
- our expectation that our results will be affected by our performance in international markets as users in developing economies increasingly come online;
- our expectation that our foreign exchange risk management program will not fully offset our net exposure to fluctuations in foreign currency exchange rates;
- the expected variability of gains and losses related to hedging activities under our foreign exchange risk management program;
- the amount and timing of revenue recognition for commitments in customer contracts with performance obligations, which could impact our estimate of the remaining amount of commitments and when we expect to recognize revenue;
- fluctuations in our capital expenditures;
- our plans to continue to invest in new businesses, products, services and technologies, systems, land and buildings for data centers and offices, and infrastructure, to continue to hire aggressively and provide competitive compensation programs, as well as to continue to invest in acquisitions;
- our expectation that our cost of revenues, research and development (R&D) expenses, sales and marketing expenses, and general and administrative expenses will increase in amount and may increase as a percentage of revenues may be affected by a number of factors;
- estimates of our future compensation expenses;
- our expectation that our other income (expense), net (OI&E), will fluctuate in the future, as it is largely driven by market dynamics;
- fluctuations in our effective tax rate;
- seasonal fluctuations in internet usage and advertiser expenditures, underlying business trends such as traditional retail seasonality and macroeconomic conditions, which are likely to cause fluctuations in our quarterly results;
- the sufficiency of our sources of funding;
- our potential exposure in connection with pending investigations, proceedings, and other contingencies;
- the sufficiency and timing of our proposed remedies in response to the European Commission's (EC) and others' decisions;
- our expectations regarding the timing, design and implementation of our new global enterprise resource planning (ERP) system;

- the expected timing and amount of Alphabet Inc.'s share repurchases;
- our long-term sustainability goals;

as well as other statements regarding our future operations, financial condition and prospects, and business strategies. Forward-looking statements may appear throughout this report and other documents we file with the Securities and Exchange Commission (SEC), including without limitation, the following sections: Item 1 "Business," Item 1A "Risk Factors," and Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations." Forward-looking statements generally can be identified by words such as "anticipates," "believes," "estimates," "expects," "intends," "plans," "predicts," "projects," "will be," "will continue," "may," "could," "will likely result," and similar expressions. These forward-looking statements are based on current expectations and assumptions that are subject to risks and uncertainties, which could cause our actual results to differ materially from those reflected in the forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in this Annual Report on Form 10-K, and in particular, the risks discussed in Item 1A, "Risk Factors" of this report and those discussed in other documents we file with the SEC. We undertake no obligation to revise or publicly release the results of any revision to these forward-looking statements, except as required by law. Given these risks and uncertainties, readers are cautioned not to place undue reliance on such forward-looking statements.

As used herein, "Alphabet," "the company," "we," "us," "our," and similar terms include Alphabet Inc. and its subsidiaries, unless the context indicates otherwise.

"Alphabet," "Google," and other trademarks of ours appearing in this report are our property. This report contains additional trade names and trademarks of other companies. We do not intend our use or display of other companies' trade names or trademarks to imply an endorsement or sponsorship of us by such companies, or any relationship with any of these companies.

PART I

ITEM 1. BUSINESS

Overview

As our founders Larry and Sergey wrote in the original founders' letter, "Google is not a conventional company. We do not intend to become one." That unconventional spirit has been a driving force throughout our history — inspiring us to do things like tackling deep computer science problems, such as our investments in artificial intelligence (AI) and quantum computing.

Alphabet is a collection of businesses — the largest of which is Google. We report all non-Google businesses collectively as Other Bets. Our Other Bets include earlier stage technologies that are further afield from our core Google business. We take a long term view and manage the portfolio of Other Bets with the discipline and rigor needed to deliver long-term returns. Each of our businesses are designed to prosper through strong leaders and independence.

Access and technology for everyone

The Internet is one of the world's most powerful equalizers, capable of propelling new ideas and people forward. Today, our mission to organize the world's information and make it universally accessible and useful is as relevant as it was when we were founded in 1998. Since then, we've evolved from a company that helps people find answers to a company that helps you get things done. We're focused on building an even more helpful Google for everyone. We aspire to give everyone the tools they need to increase their knowledge, health, happiness, and success.

Across Google, we're focused on continually innovating in areas where technology can have an impact on people's lives. Our work in AI is helping to produce earlier and more precise flood warnings. We're also working hard to make sure that our products are accessible to the more than one billion individuals around the world with a disability. For example, Android 10 has automatic Live Captions for videos, podcasts and voicemails to make it easier to consume information on the phone.

Our Other Bets are also pursuing initiatives with similar goals. For instance, as a part of our efforts in the Metro Phoenix area, Waymo is working toward our goal of making transportation safer and easier for everyone while Verily is developing tools and platforms to improve health outcomes.

Moonshots

Many companies get comfortable doing what they have always done, making only incremental changes. This incrementalism leads to irrelevance over time, especially in technology, where change tends to be revolutionary, not evolutionary. People thought we were crazy when we acquired YouTube and Android and when we launched Chrome, but those efforts have matured into major platforms for digital video and mobile devices and a safer, popular browser. We continue to look toward the future and continue to invest for the long-term. As we said in the original founders' letter, we will not shy away from high-risk, high-reward projects that we believe in because they are the key to our long-term success.

The power of machine learning

Across the company, machine learning and AI are increasingly driving many of our latest innovations. Within Google, our investments in machine learning over a decade have enabled us to build products that are smarter and more helpful. For example, our investments in AI are enabling doctors to detect cancer earlier. Machine learning powers the Google Assistant and many of our newer technologies.

Google

Serving our users

We have always been a company committed to building products that have the potential to improve the lives of millions of people. Our product innovations have made our services widely used, and our brand one of the most recognized in the world. Google's core products and platforms, such as Android, Chrome, Gmail, Google Drive, Google Maps, Google Play, Search, and YouTube each have over one billion monthly active users. As the majority of Alphabet's big bets continue to reside within Google, an important benefit of the shift to Alphabet has been the tremendous focus that we're able to have on Google's many extraordinary opportunities.

Our products have come a long way since the company was founded more than two decades ago. Instead of just showing ten blue links in our search results, we are increasingly able to provide direct answers — even if you're speaking your question using Voice Search — which makes it quicker, easier and more natural to find what you're looking for. With Google Lens, you can use your phone's camera to identify an unfamiliar landmark or find a trailer

from a movie poster. Over time, we have also added other services that let you access information quickly and easily — like Google Maps, which helps you navigate to a store while showing you current traffic conditions, or Google Photos, which helps you store and organize your photos.

This drive to make information more accessible and helpful has led us over the years to improve the discovery and creation of digital content, on the web and through platforms like Google Play and YouTube. And with the migration to mobile, people are consuming more digital content by watching more videos, playing more games, listening to more music, reading more books, and using more apps than ever before. Working with content creators and partners, we continue to build new ways for people around the world to find great digital content.

Fueling all of these great digital experiences are powerful platforms and hardware. That's why we continue to invest in platforms like our Android mobile operating system, Chrome browser, Chrome operating system, and Daydream virtual reality platform, as well as growing our family of great hardware devices. We see tremendous potential for devices to be helpful, make your life easier, and get better over time, by combining the best of Google's AI, software, and hardware. This is reflected in our latest generation of hardware products like Pixel 4 phones and the Google Nest Hub smart display. Creating beautiful products that people rely on every day is a journey that we are investing in for the long run.

Key to building helpful products for users is our commitment to keeping their data safe online. As the Internet evolves, we continue to invest in our industry-leading security technologies and privacy tools, such as the addition of auto-delete controls to enable users to automatically delete activity after 3 or 18 months and incognito mode in YouTube and Maps.

Google was a company built in the cloud. We continue to invest in infrastructure, security, data management, analytics and AI. We see significant opportunity in helping businesses enhance these strengths with features like data migration, modern development environments and machine learning tools to provide enterprise-ready cloud services, including Google Cloud Platform and G Suite. Google Cloud Platform enables developers to build, test, and deploy applications on Google's highly scalable and reliable infrastructure. Our G Suite productivity tools — which include apps like Gmail, Docs, Drive, Calendar, and more — are designed with real-time collaboration and machine intelligence to help people work smarter. Because more and more of today's great digital experiences are being built in the cloud, our Google Cloud products help businesses of all sizes take advantage of the latest technology advances to operate more efficiently.

How we make money

The goal of our advertising products is to deliver relevant ads at just the right time and to give people useful commercial information, regardless of the device they're using. We also provide advertisers with tools that help them better attribute and measure their advertising campaigns. Our advertising solutions help millions of companies grow their businesses, and we offer a wide range of products across devices and formats. We generate revenues primarily by delivering both performance advertising and brand advertising.

- **Performance advertising** creates and delivers relevant ads that users will click on, leading to direct engagement with advertisers. Most of our performance advertisers pay us when a user engages in their ads. Performance advertising lets our advertisers connect with users while driving measurable results. Our ads tools allow performance advertisers to create simple text-based ads that appear on Google properties and the properties of Google Network Members. In addition, Google Network Members use our platforms to display relevant ads on their properties, generating revenues when site visitors view or click on the ads. We continue to invest in our advertising programs and make significant upgrades.
- **Brand advertising** helps enhance users' awareness of and affinity with advertisers' products and services, through videos, text, images, and other interactive ads that run across various devices. We help brand advertisers deliver digital videos and other types of ads to specific audiences for their brand-building marketing campaigns.

We have built a world-class ad technology platform for advertisers, agencies, and publishers to power their digital marketing businesses. We aim to ensure great user experiences by serving the right ads at the right time and by building deep partnerships with brands and agencies. We also seek to improve the measurability of advertising so advertisers know when their campaigns are effective.

We have allocated substantial resources to stopping bad advertising practices and protecting users on the web. We focus on creating the best advertising experiences for our users and advertisers in many ways, ranging from filtering out invalid traffic, removing billions of bad ads from our systems every year to closely monitoring the sites, apps, and videos where ads appear and blacklisting them when necessary to ensure that ads do not fund bad content.

We continue to look to the future and are making long-term investments that will grow revenues beyond advertising, including Google Cloud, Google Play, hardware, and YouTube. We are also investing in research efforts in AI and quantum computing to foster innovation across our businesses and create new opportunities.

Other Bets

Throughout Alphabet, we are also using technology to try and solve big problems across many industries. Alphabet's investment in our portfolio of Other Bets include emerging businesses at various stages of development, ranging from those in the research and development phase to those that are in the beginning stages of commercialization, and our goal is for them to become thriving, successful businesses in the medium to long term. While these early-stage businesses naturally come with considerable uncertainty, some of them are already generating revenue and making important strides in their industries. Revenues are primarily generated from internet and TV services, as well as licensing and R&D services.

Other Bets operate as independent companies and some of them have their own boards with independent members and outside investors. We are investing in our portfolio of Other Bets and being very deliberate about the focus, scale, and pace of investments.

Competition

Our business is characterized by rapid change as well as new and disruptive technologies. We face formidable competition in every aspect of our business, particularly from companies that seek to connect people with online information and provide them with relevant advertising. We face competition from:

- General purpose search engines and information services, such as Baidu, Microsoft's Bing, Naver, Seznam, Verizon's Yahoo, and Yandex.
- Vertical search engines and e-commerce websites, such as Amazon and eBay (e-commerce), Booking's Kayak (travel queries), Microsoft's LinkedIn (job queries), and WebMD (health queries). Some users will navigate directly to such content, websites, and apps rather than go through Google.
- Social networks, such as Facebook, Snapchat, and Twitter. Some users increasingly rely on social networks for product or service referrals, rather than seeking information through traditional search engines.
- Other forms of advertising, such as billboards, magazines, newspapers, radio, and television. Our advertisers typically advertise in multiple media, both online and offline.
- Other online advertising platforms and networks, including Amazon, AppNexus, Criteo, and Facebook, that compete for advertisers that use Google Ads, our primary auction-based advertising platform.
- Providers of digital video services, such as Amazon, Apple, AT&T, Disney, Facebook, Hulu, Netflix and TikTok.

In businesses that are further afield from our advertising business, we compete with companies that have longer operating histories and more established relationships with customers and users. We face competition from:

- Other digital content and application platform providers, such as Amazon and Apple.
- Companies that design, manufacture, and market consumer hardware products, including businesses that have developed proprietary platforms.
- Providers of enterprise cloud services, including Alibaba, Amazon, and Microsoft.
- Digital assistant providers, such as Amazon and Apple.

Competing successfully depends heavily on our ability to deliver and distribute innovative products and technologies to the marketplace across our businesses. Specifically, for advertising, competing successfully depends on attracting and retaining:

- Users, for whom other products and services are literally one click away, largely on the basis of the relevance of our advertising, as well as the general usefulness, security and availability of our products and services.
- Advertisers, primarily based on our ability to generate sales leads, and ultimately customers, and to deliver their advertisements in an efficient and effective manner across a variety of distribution channels.
- Content providers, primarily based on the quality of our advertiser base, our ability to help these partners generate revenues from advertising, and the terms of our agreements with them.

Intellectual Property

We rely on various intellectual property laws, confidentiality procedures and contractual provisions to protect our proprietary technology and our brand. We have registered, and applied for the registration of, U.S. and international trademarks, service marks, domain names and copyrights. We have also filed patent applications in the U.S. and foreign countries covering certain of our technology, and acquired patent assets to supplement our portfolio. We have licensed in the past, and expect that we may license in the future, certain of our rights to other parties.

Culture and Employees

We take great pride in our culture. We embrace collaboration and creativity, and encourage the iteration of ideas to address complex technical challenges. Transparency and open dialogue are central to how we work, and we aim to ensure that company news reaches our employees first through internal channels.

Despite our rapid growth, we still cherish our roots as a startup and wherever possible empower employees to act on great ideas regardless of their role or function within the company. We strive to hire great employees, with backgrounds and perspectives as diverse as those of our global users. We work to provide an environment where these talented people can have fulfilling careers addressing some of the biggest challenges in technology and society.

Our employees are among our best assets and are critical for our continued success. We expect to continue investing in hiring talented employees and to provide competitive compensation programs to our employees. As of December 31, 2019, we had 118,899 full-time employees. Although we have work councils and statutory employee representation obligations in certain countries, our U.S. employees are not represented by a labor union. Competition for qualified personnel in our industry is intense, particularly for software engineers, computer scientists, and other technical staff.

Ongoing Commitment to Sustainability

We strive to build sustainability into everything we do from designing and operating efficient data centers, advancing carbon-free energy, creating sustainable workplaces, building better devices and services, empowering users with technology, and enabling a responsible supply chain. Google has been carbon neutral since 2007 and we are the largest corporate purchaser of renewable energy in the world. In 2018, for the second consecutive year, we matched 100% of our electricity consumption with renewable energy purchases, as reported in our 2019 Environmental Report.

Some other 2019 highlights and achievements include:

- We made our largest corporate purchase of renewable energy: 18 new energy deals totaling 1,600 megawatts, which is anticipated to spur the construction of more than \$2 billion in new energy infrastructure.
- 100% of Nest products launched in 2019 include recycled plastic content and we launched carbon neutral shipping for Google's direct customers who buy a product on Google Shopping or purchase Made by Google hardware.
- The Environmental Insights Explorer is enabling municipalities — which represent more than 70% of global greenhouse gas emissions according to the 2016 United Nations Habitat World Cities Report — to estimate emissions and develop climate action plans. In 2019, we expanded this tool to more than 100 cities worldwide.

We believe that climate change is one of the most significant global challenges of our time. In 2017, we developed a climate resilience strategy, which included conducting a climate scenario analysis. We have been on CDP's (formerly the Carbon Disclosure Project) Climate Change A list for five consecutive years. We believe our CDP report reflects the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

More information on Google's approach to sustainability can be found in our annual sustainability reports. The content of our sustainability reports are not incorporated by reference into this Annual Report on Form 10-K or in any other report or document we file with the SEC.

Seasonality

Our business is affected by seasonal fluctuations in internet usage, advertising expenditures, and underlying business trends such as traditional retail seasonality.

Available Information

Our website is located at www.abc.xyz, and our investor relations website is located at www.abc.xyz/investor. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and our Proxy Statements, and any amendments to these reports, are available through our investor relations website, free of charge, after we file them with the SEC. We also provide a link to the section of the SEC's website at www.sec.gov that has all of the reports that we file or furnish with the SEC.

We webcast via our investor relations website our earnings calls and certain events we participate in or host with members of the investment community. Our investor relations website also provides notifications of news or announcements regarding our financial performance and other items of interest to our investors, including SEC filings, investor events, press and earnings releases, and blogs. We also share Google news and product updates on Google's Keyword blog at <https://www.blog.google/>, which may be of interest or material to our investors. Further, corporate governance information, including our certificate of incorporation, bylaws, governance guidelines, board committee charters, and code of conduct, is also available on our investor relations website under the heading "Other." The content of our websites are not incorporated by reference into this Annual Report on Form 10-K or in any other report or document we file with the SEC, and any references to our websites are intended to be inactive textual references only.

ITEM 1A. RISK FACTORS

Our operations and financial results are subject to various risks and uncertainties, including but not limited to those described below, which could harm our business, reputation, financial condition, and operating results.

Risks Specific to our Company

We generate a significant portion of our revenues from advertising, and reduced spending by advertisers, a loss of partners, or new and existing technologies that block ads online and/or affect our ability to customize ads could harm our business.

We generated over 83% of total revenues from the display of ads online in 2019. Many of our advertisers, companies that distribute our products and services, digital publishers, and content providers can terminate their contracts with us at any time. These partners may not continue to do business with us if we do not create more value (such as increased numbers of users or customers, new sales leads, increased brand awareness, or more effective monetization) than their available alternatives. Changes to our advertising policies and data privacy practices, as well as changes to other companies' advertising policies or practices may affect the advertising that we are able to provide, which could harm our business. In addition, technologies have been developed that make customized ads more difficult or that block the display of ads altogether and some providers of online services have integrated technologies that could potentially impair the availability and functionality of third-party digital advertising. Failing to provide superior value or deliver advertisements effectively and competitively could harm our reputation, financial condition, and operating results.

In addition, expenditures by advertisers tend to be cyclical, reflecting overall economic conditions and budgeting and buying patterns. Adverse macroeconomic conditions can also have a material negative effect on the demand for advertising and cause our advertisers to reduce the amounts they spend on advertising, which could harm our financial condition and operating results.

We face intense competition. If we do not continue to innovate and provide products and services that are useful to users, we may not remain competitive, which could harm our business and operating results.

Our business environment is rapidly evolving and intensely competitive. Our businesses face changing technologies, shifting user needs, and frequent introductions of rival products and services. To compete successfully, we must accurately anticipate technology developments and deliver innovative, relevant and useful products, services, and technologies in a timely manner. As our businesses evolve, the competitive pressure to innovate will encompass a wider range of products and services. We must continue to invest significant resources in research and development, including through acquisitions, in order to enhance our technology and new and existing products and services.

We have many competitors in different industries. Our current and potential domestic and international competitors range from large and established companies to emerging start-ups. Some competitors have longer operating histories in various sectors. They can use their experience and resources in ways that could affect our competitive position, including by making acquisitions, continuing to invest heavily in research and development and in talent, aggressively initiating intellectual property claims (whether or not meritorious), and continuing to compete aggressively for users, advertisers, customers, and content providers. Our competitors may be able to innovate and provide products and services faster than we can or may foresee the need for products and services before us. For example, we are investing significantly in subscription-based products and services such as YouTube, which face intense competition from large experienced companies with well established relationships with users.

Our operating results may also suffer if our products and services are not responsive to the needs of our users, advertisers, publishers, customers, and content providers. As technologies continue to develop, our competitors may be able to offer experiences that are, or that are seen to be, substantially similar to or better than ours. This may force us to compete in different ways and expend significant resources in order to remain competitive. If our competitors

are more successful than we are in developing compelling products or in attracting and retaining users, advertisers, publishers, customers, and content providers, our operating results could be harmed.

Our ongoing investment in new businesses, products, services, and technologies is inherently risky, and could disrupt our current operations and harm our financial condition and operating results.

We have invested and expect to continue to invest in new businesses, products, services, and technologies. The investments that we are making across Google and Other Bets reflect our ongoing efforts to innovate and provide products and services that are useful to users, advertisers, publishers, customers, and content providers. Our investments in Google and Other Bets span a wide range of industries beyond online advertising. Such investments ultimately may not be commercially viable or may not result in an adequate return of capital and, in pursuing new strategies, we may incur unanticipated liabilities. These endeavors may involve significant risks and uncertainties, including diversion of management resources and, with respect to Other Bets, the use of alternative investment, governance, or compensation structures that may fail to adequately align incentives across the company or otherwise accomplish their objectives.

Within Google, we continue to invest heavily in hardware, including our smartphones and home devices, which is a highly competitive market with frequent introduction of new products and services, rapid adoption of technological advancements by competitors, short product life cycles, evolving industry standards, continual improvement in product price and performance characteristics, and price and feature sensitivity on the part of consumers and businesses. There can be no assurance we will be able to provide hardware that competes effectively.

We are also devoting significant resources to develop and deploy our enterprise-ready cloud services, including Google Cloud Platform and G Suite. We are incurring costs to build and maintain infrastructure to support cloud computing services and hire talent, particularly to support and scale the Cloud salesforce. At the same time, our competitors are rapidly developing and deploying cloud-based services. Pricing and delivery models are competitive and evolving, and we may not attain sufficient scale and profitability to achieve our business objectives.

Within Other Bets, we are investing significantly in the areas of health, life sciences, and transportation, among others. These investment areas face intense competition from large experienced and well-funded competitors and our offerings may not be able to compete effectively or to operate at sufficient levels of profitability.

In addition, new and evolving products and services, including those that use artificial intelligence and machine learning, raise ethical, technological, legal, regulatory, and other challenges, which may negatively affect our brands and demand for our products and services. Because all of these new ventures are inherently risky, no assurance can be given that such strategies and offerings will be successful and will not harm our reputation, financial condition, and operating results.

Our revenue growth rate could decline over time, and we anticipate downward pressure on our operating margin in the future.

Our revenue growth rate could decline over time as a result of a number of factors, including increasing competition and the continued expansion of our business into a variety of new fields. Changes in device mix, geographic mix, ongoing product and policy changes, product mix, and property mix and an increasing competition for advertising may also affect our advertising revenue growth rate. We may also experience a decline in our revenue growth rate as our revenues increase to higher levels, if there is a decrease in the rate of adoption of our products, services, and technologies, or due to deceleration or decline in demand for devices used to access our services, among other factors.

In addition to a decline in our revenue growth rate, we may also experience downward pressure on our operating margin resulting from a variety of factors, such as the continued expansion of our business into new fields, including products and services such as hardware, Google Cloud, Google Play, gaming, and subscription products, as well as significant investments in Other Bets, all of which may have margins lower than those we generate from advertising. We may also experience downward pressure on our operating margins from increasing competition and increased costs for many aspects of our business, including within advertising where changes such as device mix, property mix, and partner agreements can affect margin. The margin we earn on revenues generated from our Google Network Members could also decrease in the future if we pay a larger percentage of advertising fees to them. We may also pay increased TAC to our distribution partners as well as increased content acquisition costs to content providers. We may also face an increase in infrastructure costs, supporting businesses such as Search, Google Cloud, and YouTube. Additionally, our spend to promote new products and services or distribute certain products and services or increased investment in our innovation efforts across Google and our Other Bets businesses may affect our operating margins.

Due to these factors and the evolving nature of our business, our historical revenue growth rate and historical operating margin may not be indicative of our future performance.

Our intellectual property rights are valuable, and any inability to protect them could reduce the value of our products, services and brand as well as affect our ability to compete.

Our patents, trademarks, trade secrets, copyrights, and other intellectual property rights are important assets for us. Various events outside of our control pose a threat to our intellectual property rights, as well as to our products, services, and technologies. For example, effective intellectual property protection may not be available in every country in which our products and services are distributed or made available through the Internet. Also, the efforts we have taken to protect our proprietary rights may not be sufficient or effective. Although we seek to obtain patent protection for our innovations, it is possible we may not be able to protect some of these innovations. Moreover, we may not have adequate patent or copyright protection for certain innovations that later turn out to be important. Furthermore, there is always the possibility, despite our efforts, that the scope of the protection gained will be insufficient or that an issued patent may be deemed invalid or unenforceable.

We also seek to maintain certain intellectual property as trade secrets. The secrecy of such trade secrets and other sensitive information could be compromised, which could cause us to lose the competitive advantage resulting from these trade secrets. We also face risks associated with our trademarks. For example, there is a risk that the word “Google” could become so commonly used that it becomes synonymous with the word “search.” Some courts have ruled that “Google” is a protectable trademark, but it is possible that other courts, particularly those outside of the United States, may reach a different determination. If this happens, we could lose protection for this trademark, which could result in other people using the word “Google” to refer to their own products, thus diminishing our brand.

Any significant impairment of our intellectual property rights could harm our business and our ability to compete. Also, protecting our intellectual property rights is costly and time consuming. Any increase in the unauthorized use of our intellectual property could make it more expensive to do business and harm our operating results.

Our business depends on strong brands, and failing to maintain and enhance our brands would hurt our ability to expand our base of users, advertisers, customers, content providers, and other partners.

Our strong brands have significantly contributed to the success of our business. Maintaining and enhancing the brands within Google and Other Bets increases our ability to enter new categories and launch new and innovative products that better serve the needs of our users, advertisers, customers, content providers, and other partners. Our brands may be negatively affected by a number of factors, including, among others, reputational issues, third-party content shared on our platforms, data privacy and security issues and developments, and product or technical performance failures. For example, if we fail to appropriately respond to the sharing of misinformation or objectionable content on our services or objectionable practices by advertisers, or to otherwise adequately address user concerns, our users may lose confidence in our brands. Our brands may also be negatively affected by the use of our products or services to disseminate information that is deemed to be false or misleading.

Furthermore, failure to maintain and enhance equity in our brands may harm our business, financial condition, and operating results. Our success will depend largely on our ability to remain a technology leader and continue to provide high-quality, innovative products and services that are truly useful and play a valuable role in a range of settings.

We face a number of manufacturing and supply chain risks that, if not properly managed, could harm our financial condition, operating results, and prospects.

We face a number of risks related to manufacturing and supply chain management, which could affect our ability to supply both our products and our internet-based services.

We rely on other companies to manufacture many of our assemblies and finished products, to design certain of our components and parts, and to participate in the distribution of our products and services. Our business could be negatively affected if we are not able to engage these companies with the necessary capabilities or capacity on reasonable terms, or if those we engage fail to meet their obligations (whether due to financial difficulties or other reasons), or make adverse changes in the pricing or other material terms of our arrangements with them.

We may experience supply shortages and price increases driven by raw material availability, manufacturing capacity, labor shortages, industry allocations, tariffs, trade disputes and barriers, natural disasters, the effects of climate change (such as sea level rise, drought, flooding, wildfires, and increased storm severity), and significant changes in the financial or business condition of our suppliers. We may experience shortages or other supply chain disruptions that could negatively affect our operations. In addition, some of the components we use in our technical infrastructure and products are available only from a single source or limited sources, and we may not be able to find replacement vendors on favorable terms in the event of a supply chain disruption. In addition, a significant hardware supply interruption could delay critical data center upgrades or expansions.

We may enter into long term contracts for materials and products that commit us to significant terms and conditions. We may be liable for materials and products that are not consumed due to market acceptance, technological change, obsolescences, quality, product recalls, and warranty issues. For instance, because many of our hardware supply contracts have volume-based pricing or minimum purchase requirements, if the volume of our hardware sales decreases or does not reach projected targets, we could face increased materials and manufacturing costs or other financial liabilities that could make our products more costly per unit to manufacture and negatively affect our financial results. Furthermore, certain of our competitors may negotiate more favorable contractual terms based on volume and other commitments that may provide them with competitive advantages and may affect our supply.

Our products and services may have quality issues resulting from design, manufacturing, or operations. Sometimes, these issues may be caused by components we purchase from other manufacturers or suppliers. If the quality of our products and services does not meet expectations or our products or services are defective, it could harm our reputation, financial condition, and operating results.

We require our suppliers and business partners to comply with laws and, where applicable, our company policies, such as the Google Supplier Code of Conduct, regarding workplace and employment practices, data security, environmental compliance and intellectual property licensing, but we do not control them or their practices. Violations of law or unethical business practices could result in supply chain disruptions, canceled orders, harm to key relationships, and damage to our reputation. Their failure to procure necessary license rights to intellectual property, could affect our ability to sell our products or services and expose us to litigation or financial claims.

Interruption, interference with, or failure of our information technology and communications systems could hurt our ability to effectively provide our products and services, which could harm our reputation, financial condition, and operating results. In addition, complications with the design or implementation of our new global enterprise resource planning (ERP) system could harm our business and operations.

The availability of our products and services and fulfillment of our customer contracts depend on the continuing operation of our information technology and communications systems. Our systems are vulnerable to damage, interference, or interruption from terrorist attacks, natural disasters, the effects of climate change (such as sea level rise, drought, flooding, wildfires, and increased storm severity), power loss, telecommunications failures, computer viruses, ransomware attacks, computer denial of service attacks, phishing schemes, or other attempts to harm or access our systems. Some of our data centers are located in areas with a high risk of major earthquakes or other natural disasters. Our data centers are also subject to break-ins, sabotage, and intentional acts of vandalism, and, in some cases, to potential disruptions resulting from problems experienced by facility operators. Some of our systems are not fully redundant, and disaster recovery planning cannot account for all eventualities.

The occurrence of a natural disaster, closure of a facility, or other unanticipated problems at our data centers could result in lengthy interruptions in our service. In addition, our products and services are highly technical and complex and may contain errors or vulnerabilities, which could result in interruptions in or failure of our services or systems.

In addition, we rely extensively on information systems and technology to manage our business and summarize operating results. We are in the process of a multi-year implementation of a new ERP system, which will replace much of our existing core financial systems. The ERP system is designed to accurately maintain our financial records, enhance the flow of financial information, improve data management, and provide timely information to our management team. We may not be able to successfully implement the ERP system without experiencing delays, increased costs, and other difficulties. Failure to successfully design and implement the new ERP system as planned could harm our business, financial condition, and operating results. Additionally, if we do not effectively implement the ERP system as planned or the ERP system does not operate as intended, the effectiveness of our internal control over financial reporting could be negatively affected.

Our international operations expose us to additional risks that could harm our business, our financial condition, and operating results.

Our international operations are significant to our revenues and net income, and we plan to continue to grow internationally. International revenues accounted for approximately 54% of our consolidated revenues in 2019. In addition to risks described elsewhere in this section, our international operations expose us to other risks, including the following:

- Restrictions on foreign ownership and investments, and stringent foreign exchange controls that might prevent us from repatriating cash earned in countries outside the U.S.

- Import and export requirements, tariffs, trade disputes and barriers, and customs classifications that may prevent us from offering products or providing services to a particular market, or that could limit our ability to source assemblies and finished products from a particular market, and may increase our operating costs.
- Longer payment cycles in some countries, increased credit risk, and higher levels of payment fraud.
- Evolving foreign events, including Brexit, the United Kingdom's withdrawal from the European Union (EU). Brexit may adversely affect our revenues and could subject us to new regulatory costs and challenges (including the transfer of personal data between the EU and the United Kingdom), in addition to other adverse effects that we are unable to effectively anticipate.
- Anti-corruption laws, such as the U.S. Foreign Corrupt Practices Act, and other local laws prohibiting certain payments to government officials, violations of which could result in civil and criminal penalties.
- Uncertainty regarding liability for services and content, including uncertainty as a result of local laws and lack of legal precedent.
- Different employee/employer relationships, existence of works councils and labor unions, and other challenges caused by distance, language, and cultural differences, making it harder to do business in certain jurisdictions.

Because we conduct business in currencies other than U.S. dollars but report our financial results in U.S. dollars, we face exposure to fluctuations in foreign currency exchange rates. Although we hedge a portion of our international currency exposure, significant fluctuations in exchange rates between the U.S. dollar and foreign currencies may adversely affect our revenues and earnings. Hedging programs are also inherently risky and could expose us to additional risks that could harm our financial condition and operating results.

Risks Related to our Industry

People access the Internet through a variety of platforms and devices that continue to evolve with the advancement of technology and user preferences. If manufacturers and users do not widely adopt versions of our products and services developed for these new interfaces, our business could be harmed.

People access the Internet through a growing variety of devices such as desktop computers, mobile phones, smartphones, laptops and tablets, video game consoles, voice-activated speakers, wearables, automobiles, and television-streaming devices. Our products and services may be less popular on these new interfaces. Each manufacturer or distributor may establish unique technical standards for its devices, and our products and services may not be available on these devices as a result. Some manufacturers may also elect not to include our products on their devices. In addition, search queries are increasingly being undertaken via voice-activated speakers, apps, social media or other platforms, which could harm our business. It is hard to predict the challenges we may encounter in adapting our products and services and developing competitive new products and services. We expect to continue to devote significant resources to creating and supporting products and services across multiple platforms and devices. Failing to attract and retain a substantial number of new device manufacturers, suppliers, distributors, developers, and users, or failing to develop products and technologies that work well on new devices and platforms, could harm our business, financial condition, and operating results and ability to capture future business opportunities.

Data privacy and security concerns relating to our technology and our practices could damage our reputation, cause us to incur significant liability, and deter current and potential users or customers from using our products and services. Software bugs or defects, security breaches, and attacks on our systems could result in the improper disclosure and use of user data and interference with our users and customers' ability to use our products and services, harming our business operations and reputation.

Concerns about our practices with regard to the collection, use, disclosure, or security of personal information or other data-privacy-related matters, even if unfounded, could harm our reputation, financial condition, and operating results. Our policies and practices may change over time as expectations regarding privacy and data change.

Our products and services involve the storage and transmission of proprietary information, and bugs, theft, misuse, defects, vulnerabilities in our products and services, and security breaches expose us to a risk of loss of this information, improper use and disclosure of such information, litigation, and other potential liability. Systems and control failures, security breaches, failure to comply with our privacy policies, and/or inadvertent disclosure of user data could result in government and legal exposure, seriously harm our reputation and brand and, therefore, our business, and impair our ability to attract and retain users or customers. We expect to continue to expend significant resources to maintain security protections that shield against bugs, theft, misuse, or security vulnerabilities or breaches.

We experience cyber attacks and other attempts to gain unauthorized access to our systems on a regular basis. We may experience future security issues, whether due to employee error or malfeasance or system errors or

vulnerabilities in our or other parties' systems, which could result in significant legal and financial exposure. Government inquiries and enforcement actions, litigation, and adverse press coverage could harm our business. We may be unable to anticipate or detect attacks or vulnerabilities or implement adequate preventative measures. Attacks and security issues could also compromise trade secrets and other sensitive information, harming our business.

While we have dedicated significant resources to privacy and security incident response capabilities, including dedicated worldwide incident response teams, our response process may not be adequate, may fail to accurately assess the severity of an incident, may not respond quickly enough, or may fail to sufficiently remediate an incident. As a result, we may suffer significant legal, reputational, or financial exposure, which could harm our business, financial condition, and operating results.

Our ongoing investments in safety, security, and content review will likely continue to identify abuse of our platforms and misuse of user data.

In addition to our efforts to mitigate cyber attacks, we are making significant investments in safety, security, and content review efforts to combat misuse of our services and unauthorized access to user data by third parties, including investigations and review of platform applications that could access the information of users of our services. As a result of these efforts, we could discover incidents of unnecessary access to or misuse of user data or other undesirable activity by third parties. We may not discover all such incidents or activity, whether as a result of our data limitations, including our lack of visibility over our encrypted services, the scale of activity on our platform, or other factors, and we may be notified of such incidents or activity via third parties. Such incidents and activities may include the use of user data or our systems in a manner inconsistent with our terms, contracts or policies, the existence of false or undesirable user accounts, election interference, improper ad purchases, activities that threaten people's safety on- or offline, or instances of spamming, scraping, or spreading disinformation. We may also be unsuccessful in our efforts to enforce our policies or otherwise remediate any such incidents. Any of the foregoing developments may negatively affect user trust and engagement, harm our reputation and brands, require us to change our business practices in a manner adverse to our business, and adversely affect our business and financial results. Any such developments may also subject us to additional litigation and regulatory inquiries, which could result in monetary penalties and damages, divert management's time and attention, and lead to enhanced regulatory oversight.

Problematic content, including low-quality user-generated content, web spam, content farms, and other violations of our guidelines could affect the quality of our services, which could damage our reputation and deter our current and potential users from using our products and services.

We, like others in the industry, face violations of our content guidelines, including sophisticated attempts by bad actors to manipulate our hosting and advertising systems to fraudulently generate revenues, or to otherwise generate traffic that does not represent genuine user interest or intent. While we invest significantly in efforts to promote high-quality and relevant results and to detect and prevent low-quality content and invalid traffic, we may be unable to adequately detect and prevent such abuses.

Many websites violate or attempt to violate our guidelines, including by seeking to inappropriately rank higher in search results than our search engine's assessment of their relevance and utility would rank them. Such efforts (known as "web spam") may affect the quality of content on our platforms and lead them to display false, misleading or undesirable content.

Although English-language web spam in our search results has been reduced, and web spam in most other languages is limited, we expect web spammers will continue to seek inappropriate ways to improve their rankings. We continuously combat web spam in our search results, including through indexing technology that makes it harder for spam-like, less useful web content to rank highly. We also continue to invest in and deploy proprietary technology to detect and prevent web spam from abusing our platforms.

We also face other challenges from low-quality and irrelevant content websites, including content farms, which are websites that generate large quantities of low-quality content to help them improve their search rankings. We are continually launching algorithmic changes focused on low-quality websites.

If we fail to detect and prevent an increase in problematic content, it could hurt our reputation for delivering relevant information or reduce use of our platforms, harming our financial condition or operating results. It may also subject us to litigation and regulatory inquiries, which could result in monetary penalties and damages, divert management's time and attention, and lead to enhanced regulatory oversight.

Our business depends on continued and unimpeded access to the Internet by us and our users. Internet access providers may be able to restrict, block, degrade, or charge for access to certain of our products and services, which could lead to additional expenses and the loss of users and advertisers.

Our products and services depend on the ability of our users to access the Internet, and certain of our products require significant bandwidth to work effectively. Currently, this access is provided by companies that have significant market power in the broadband and internet access marketplace, including incumbent telephone companies, cable companies, mobile communications companies, and government-owned service providers. Some of these providers have taken, or have stated that they may take measures that could degrade, disrupt, or increase the cost of user access to certain of our products by restricting or prohibiting the use of their infrastructure to support or facilitate our offerings, or by charging increased fees to us or our users to provide our offerings. Some jurisdictions have adopted regulations prohibiting certain forms of discrimination by internet access providers; however, substantial uncertainty exists in the United States and elsewhere regarding such protections. For example, in 2018 the United States Federal Communications Commission repealed net neutrality rules, which could lead internet access providers to restrict, block, degrade, or charge for access to certain of our products and services. In addition, in some jurisdictions, our products and services have been subject to government-initiated restrictions or blockages. Such interference could result in a loss of existing users, customers and advertisers, goodwill, and increased costs, and could impair our ability to attract new users, customers and advertisers, thereby harming our business.

Risks Related to Laws and Regulations

We are subject to increasing regulatory scrutiny as well as changes in public policies governing a wide range of topics that may negatively affect our business.

We and other companies in the technology industry are experiencing increased regulatory scrutiny. For instance, various regulatory agencies, including competition, consumer protection, and privacy authorities, are reviewing aspects of our products and services. We continue to cooperate with these investigations. Prior, existing, and new investigations have in the past and may in the future result in substantial fines and penalties, changes to our products and services, alterations to our business operations, and civil litigation, all of which could harm our business, reputation, financial condition, and operating results.

Changes in international and local social, political, economic, tax, and regulatory conditions or in laws and policies governing a wide range of topics may increase our cost of doing business, limit our ability to pursue certain business models or offer certain products or services, and cause us to change our business practices. Further, our investment in a variety of new fields, including the health industry and payment services, also raises a number of new regulatory issues. These factors could harm our business and operating results in material ways.

A variety of new and existing laws and/or interpretations could harm our business.

We are subject to numerous U.S. and foreign laws and regulations covering a wide variety of subject matters. New laws and regulations (or new interpretations or applications of existing laws and regulations in a manner inconsistent with our practices) may make our products and services less useful, limit our ability to pursue certain business models or offer certain products and services, require us to incur substantial costs, expose us to unanticipated civil or criminal liability, or cause us to change our business practices. These laws and regulations are evolving and involve matters central to our business, including, among others:

- Competition laws and regulations around the world.
- Privacy laws, such as the California Consumer Privacy Act of 2018 that came into effect in January of 2020, which gives new data privacy rights to California residents, and SB-327 in California, which regulates the security of data in connection with internet connected devices.
- Data protection laws passed by many states within the U.S. and by certain countries regarding notification to data subjects and/or regulators when there is a security breach of personal data.
- Copyright laws, such as the EU Directive on Copyright in the Digital Single Market (EUCD) of April 17, 2019, which increases the liability of content-sharing services with respect to content uploaded by their users. It has also created a new property right in news publications that will limit the ability of some online services to interact with or present such content. Each EU Member State must implement the EUCD by June 7, 2021. In addition, there are new constraining licensing regimes that limit our ability to operate with respect to copyright protected works.
- Data localization laws, which generally mandate that certain types of data collected in a particular country be stored and/or processed within that country.

- Various U.S. and international laws that govern the distribution of certain materials to children and regulate the ability of online services to collect information from minors.
- Various laws with regard to content removal and disclosure obligations, such as the Network Enforcement Act in Germany, which may affect our businesses and operations and may subject us to significant fines if such laws are interpreted and applied in a manner inconsistent with our practices or when we may not proactively discover such content due to the scale of third-party content and the limitations of existing technologies. Other countries, including Singapore, Australia, and the United Kingdom, have implemented or are considering similar legislation imposing penalties for failure to remove certain types of content.

In addition, the applicability and scope of these laws, as interpreted by the courts, remain uncertain and could harm our business. For example:

- We rely on statutory safe harbors, as set forth in the Digital Millennium Copyright Act in the United States and the E-Commerce Directive in Europe, against copyright liability for various linking, caching, and hosting activities. Any legislation or court rulings affecting these safe harbors may adversely affect us.
- Court decisions such as the judgment of the Court of Justice of the European Union (CJEU) on May 13, 2014 on the ‘right to be forgotten,’ which allows individuals to demand that Google remove search results about them in certain instances, may limit the content we can show to our users and impose significant operational burdens.
- Court decisions that require Google to remove links not just in the jurisdiction of the issuing court, but for all versions of the search engine worldwide, including in locations where the content at issue is lawful, may limit the content we can show to our users and impose significant operational burdens. The Supreme Court of Canada issued such a decision against Google in June 2017, and others could treat its decision as persuasive. With respect to the ‘right to be forgotten,’ a follow-up case of the CJEU on September 24, 2019 ruled that a search engine operator is not required to remove links from all versions of the search engine worldwide, but the court also noted in some cases, removal of links from all versions of the search engine available from the EU (including non-EU specific versions) may be required.

The introduction of new businesses, products, services, and technologies, our activities in certain jurisdictions, or other actions we take may subject us to additional laws and regulations. The costs of compliance with these laws and regulations are high and are likely to increase in the future. Any failure on our part to comply with laws and regulations can result in negative publicity and diversion of management time and effort and may subject us to significant liabilities and other penalties.

We are subject to claims, suits, government investigations, and other proceedings that may harm our business, financial condition, and operating results.

We are subject to claims, suits, and government investigations involving competition, intellectual property, data privacy and security, consumer protection, tax, labor and employment, commercial disputes, content generated by our users, goods and services offered by advertisers or publishers using our platforms, and other matters. Due to our manufacturing and sale of an expanded suite of products, including hardware as well as Google Cloud offerings, we may also be subject to a variety of claims including product warranty, product liability, and consumer protection claims related to product defects, among other litigation. We may also be subject to claims involving health and safety, hazardous materials usage, other environmental impacts, or service disruptions or failures.

Any of these types of legal proceedings can have an adverse effect on us because of legal costs, diversion of management resources, negative publicity and other factors. Determining reserves for our pending litigation is a complex, fact-intensive process that requires significant judgment. The resolution of one or more such proceedings has resulted in, and may in the future result in, additional substantial fines, penalties, injunctions, and other sanctions that could harm our business, financial condition, and operating results.

We may be subject to legal liability associated with providing online services or content.

Our products and services let users exchange information, advertise products and services, conduct business, and engage in various online activities. We also place advertisements displayed on other companies’ websites, and we offer third-party products, services, and/or content. The law relating to the liability of online service providers for others’ activities on their services is still somewhat unsettled both within the U.S. and internationally. Claims have been brought against us for defamation, negligence, breaches of contract, copyright and trademark infringement, unfair competition, unlawful activity, torts, fraud, or other legal theories based on the nature and content of information available on or via our services.

We may be subject to claims by virtue of our involvement in hosting, transmitting, marketing, branding, or providing access to content created by third parties. Defense of any such actions could be costly and involve significant time and attention of our management and other resources, may result in monetary liabilities or penalties, and may require us to change our business in an adverse manner.

Privacy and data protection regulations are complex and rapidly evolving areas. Adverse interpretations of these laws could harm our business, reputation, financial condition, and operating results.

Authorities around the world have adopted and are considering a number of legislative and regulatory proposals concerning data protection and limits on encryption of user data. Adverse legal rulings, legislation, or regulation could result in fines and orders requiring that we change our data practices, which could have an adverse effect on our ability to provide services, harming our business operations. Complying with these evolving laws could result in substantial costs and harm the quality of our products and services, negatively affecting our business.

Recent legal developments in Europe have created compliance uncertainty regarding transfers of personal data from Europe to the United States. For example, the General Data Protection Regulation (GDPR) applies to all of our activities conducted from an establishment in the EU or related to products and services that we offer to EU users or customers, or the monitoring of their behavior in the EU. The GDPR creates a range of new compliance obligations.

Ensuring compliance with the GDPR is an ongoing commitment that involves substantial costs, and despite our efforts, governmental authorities or others have asserted and may continue to assert that our business practices fail to comply with its requirements. If our operations are found to violate GDPR requirements, we may incur substantial fines, have to change our business practices, and face reputational harm, any of which could have a material adverse effect on our business. In particular, serious breaches of the GDPR can result in administrative fines of up to 4% of annual worldwide revenues. Fines of up to 2% of annual worldwide revenues can be levied for other specified violations.

The EU-U.S. and the Swiss-U.S. Privacy Shield frameworks allow U.S. companies that self-certify to the U.S. Department of Commerce and publicly commit to comply with specified requirements to import personal data from the EU and Switzerland. However, these frameworks face a number of legal challenges and their validity remains subject to legal, regulatory, and political developments in both Europe and the U.S. The potential invalidation of data transfer mechanisms could have a significant adverse impact on our ability to process and transfer personal data outside of the EEA.

These developments create some uncertainty, and compliance obligations could cause us to incur costs or harm the operations of our products and services in ways that harm our business.

We face, and may continue to face intellectual property and other claims that could be costly to defend, result in significant damage awards or other costs (including indemnification awards), and limit our ability to use certain technologies in the future.

We, like other internet, technology and media companies, hold large numbers of patents, copyrights, trademarks, and trade secrets and are frequently subject to litigation based on allegations of infringement or other violations of intellectual property rights. In addition, patent-holding companies may frequently seek to generate income from patents they have obtained by bringing claims against us. As we have grown, the number of intellectual property claims against us has increased and may continue to increase as we develop new products, services, and technologies.

We have had patent, copyright, trade secret, and trademark infringement lawsuits filed against us claiming that certain of our products, services, and technologies infringe the intellectual property rights of others. Other parties have also sought broad injunctive relief against us by filing claims in U.S. and international courts and the U.S. International Trade Commission (ITC) for exclusion and cease-and-desist orders, which could limit our ability to sell our products or services in the U.S. or elsewhere if our products or services or those of our customers or suppliers are found to infringe the intellectual property subject to the claims. Adverse results in any of these lawsuits may include awards of monetary damages, costly royalty or licensing agreements (if licenses are available at all), or orders preventing us from offering certain features, functionalities, products, or services. They may also cause us to change our business practices and require development of non-infringing products, services, or technologies, which could result in a loss of revenues for us and otherwise harm our business.

Many of our agreements with our customers and partners, including certain suppliers, require us to defend against certain intellectual property infringement claims and in some cases indemnify them for certain intellectual property infringement claims against them, which could result in increased costs for defending such claims or significant damages if there were an adverse ruling in any such claims. Such customers and partners may also discontinue the use of our products, services, and technologies, as a result of injunctions or otherwise, which could result in loss of revenues and adversely affect our business. Moreover, intellectual property indemnities provided to us by our suppliers, when obtainable, may not cover all damages and losses suffered by us and our customers arising from intellectual property

infringement claims. Furthermore, in connection with our divestitures, we have agreed, and may in the future agree, to provide indemnification for certain potential liabilities, including those associated with intellectual property claims.

Regardless of their merits, intellectual property claims are often time consuming and expensive to litigate or settle. To the extent such claims are successful, they may harm our business, including our product and service offerings, financial condition, or operating results.

Risks Related to Ownership of our Stock

We cannot guarantee that any share repurchase program will be fully consummated or that any share repurchase program will enhance long-term stockholder value, and share repurchases could increase the volatility of the price of our stock and could diminish our cash reserves.

In January 2018, January 2019, and July 2019, the board of directors of Alphabet authorized the company to repurchase up to \$8.6 billion, \$12.5 billion, and \$25.0 billion of its Class C capital stock, respectively. Share repurchases pursuant to the January 2018 and January 2019 authorizations were completed in 2019. As of December 31, 2019, \$20.8 billion remains available for repurchase. Our repurchase program does not have an expiration date and does not obligate Alphabet to repurchase any specific dollar amount or to acquire any specific number of shares. Our share repurchase program could affect the price of our stock and increase volatility and may be suspended or terminated at any time, which may result in a decrease in the trading price of our stock.

The concentration of our stock ownership limits our stockholders' ability to influence corporate matters.

Our Class B common stock has 10 votes per share, our Class A common stock has one vote per share, and our Class C capital stock has no voting rights. As of December 31, 2019, Larry Page and Sergey Brin beneficially owned approximately 84.3% of our outstanding Class B common stock, which represented approximately 51.2% of the voting power of our outstanding common stock. Through their stock ownership, Larry and Sergey have significant influence over all matters requiring stockholder approval, including the election of directors and significant corporate transactions, such as a merger or other sale of our company or our assets, for the foreseeable future. In addition, because our Class C capital stock carries no voting rights (except as required by applicable law), the issuance of the Class C capital stock, including in future stock-based acquisition transactions and to fund employee equity incentive programs, could continue Larry and Sergey's current relative voting power and their ability to elect all of our directors and to determine the outcome of most matters submitted to a vote of our stockholders. This concentrated control limits or severely restricts other stockholders' ability to influence corporate matters and we may take actions that some of our stockholders do not view as beneficial, which could reduce the market price of our Class A common stock and our Class C capital stock.

Provisions in our charter documents and under Delaware law could discourage a takeover that stockholders may consider favorable.

Provisions in Alphabet's certificate of incorporation and bylaws may have the effect of delaying or preventing a change of control or changes in our management. These provisions include the following:

- Our certificate of incorporation provides for a tri-class capital stock structure. As a result of this structure, Larry and Sergey have significant influence over all matters requiring stockholder approval, including the election of directors and significant corporate transactions, such as a merger or other sale of our company or our assets. This concentrated control could discourage others from initiating any potential merger, takeover, or other change of control transaction that other stockholders may view as beneficial. As noted above, the issuance of the Class C capital stock could have the effect of continuing the influence of Larry and Sergey.
- Our board of directors has the right to elect directors to fill a vacancy created by the expansion of the board of directors or the resignation, death, or removal of a director, which prevents stockholders from being able to fill vacancies on our board of directors.
- Our stockholders may not act by written consent. As a result, a holder, or holders, controlling a majority of our capital stock would not be able to take certain actions without holding a stockholders' meeting.
- Our certificate of incorporation prohibits cumulative voting in the election of directors. This limits the ability of minority stockholders to elect director candidates.
- Stockholders must provide advance notice to nominate individuals for election to the board of directors or to propose matters that can be acted upon at a stockholders' meeting. These provisions may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of our company.

- Our board of directors may issue, without stockholder approval, shares of undesignated preferred stock. The ability to issue undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to acquire us.

As a Delaware corporation, we are also subject to certain Delaware anti-takeover provisions. Under Delaware law, a corporation may not engage in a business combination with any holder of 15% or more of its outstanding voting stock unless the holder has held the stock for three years or, among other things, the board of directors has approved the transaction. Our board of directors could rely on Delaware law to prevent or delay an acquisition of us.

General Risks

Our operating results may fluctuate, which makes our results difficult to predict and could cause our results to fall short of expectations.

Our operating results may fluctuate as a result of a number of factors, many outside of our control. As a result, comparing our operating results on a period-to-period basis may not be meaningful, and you should not rely on our past results as an indication of our future performance. Our quarterly, year-to-date, and annual expenses as a percentage of our revenues may differ significantly from our historical rates. Our operating results in future quarters may fall below expectations. Any of these events could cause our stock price to fall. Each of the risk factors listed in this section in addition to the following factors may affect our operating results:

- Our ability to continue to attract and retain users and customers to our products and services.
- Our ability to attract user and/or customer adoption of, and generate significant revenues from, new products, services, and technologies in which we have invested considerable time and resources.
- Our ability to monetize traffic on Google properties and our Google Network Members' properties across various devices.
- Revenue fluctuations caused by changes in device mix, geographic mix, ongoing product and policy changes, product mix, and property mix.
- The amount of revenues and expenses generated and incurred in currencies other than U.S. dollars, and our ability to manage the resulting risk through our foreign exchange risk management program.
- The amount and timing of operating costs and expenses and capital expenditures related to the maintenance and expansion of our businesses, operations, and infrastructure.
- Our focus on long-term goals over short-term results.
- The results of our acquisitions, divestitures, and our investments in risky projects, including new businesses, products, services, and technologies.
- Our ability to keep our products and services operational at a reasonable cost and without service interruptions.
- The seasonal fluctuations in internet usage, advertising spending, and underlying business trends such as traditional retail seasonality. Our rapid growth has tended to mask the cyclical and seasonality of our business. As our growth rate has slowed, the cyclical and seasonality in our business has become more pronounced and caused our operating results to fluctuate.
- Geopolitical events, including trade disputes.
- Changes in global business or macroeconomic conditions.

Because our businesses are changing and evolving, our historical operating results may not be useful to you in predicting our future operating results.

Acquisitions, joint ventures, investments, and divestitures could result in operating difficulties, dilution, and other consequences that may harm our business, financial condition, and operating results.

Acquisitions, joint ventures, investments and divestitures are important elements of our overall corporate strategy and use of capital, and these transactions could be material to our financial condition and operating results. We expect to continue to evaluate and enter into discussions regarding a wide array of potential strategic transactions, which could create unforeseen operating difficulties and expenditures. Some of the areas where we face risks include:

- Diversion of management time and focus from operating our business to challenges related to acquisitions and other strategic transactions.
- Failure to successfully integrate and further develop the acquired business or technology.

- Implementation or remediation of controls, procedures, and policies at the acquired company.
- Integration of the acquired company's accounting, human resource, and other administrative systems, and coordination of product, engineering, and sales and marketing functions.
- Transition of operations, users, and customers onto our existing platforms.
- Failure to obtain required approvals on a timely basis, if at all, from governmental authorities, or conditions placed upon approval that could, among other things, delay or prevent us from completing a transaction, or otherwise restrict our ability to realize the expected financial or strategic goals of a transaction.
- In the case of foreign acquisitions, the need to integrate operations across different cultures and languages and to address the particular economic, currency, political, and regulatory risks associated with specific countries.
- Cultural challenges associated with integrating employees from the acquired company into our organization, and retention of employees from the businesses we acquire.
- Liability for activities of the acquired company before the acquisition, including patent and trademark infringement claims, data privacy and security issues, violations of laws, commercial disputes, tax liabilities, and other known and unknown liabilities.
- Litigation or other claims in connection with the acquired company, including claims from terminated employees, customers, former stockholders, or other third parties.

Our failure to address these risks or other problems encountered in connection with our past or future acquisitions and other strategic transactions could cause us to fail to realize their anticipated benefits, incur unanticipated liabilities, and harm our business generally.

Our acquisitions and other strategic transactions could also result in dilutive issuances of our equity securities, the incurrence of debt, contingent liabilities, or amortization expenses, or impairment of goodwill and/or purchased long-lived assets, and restructuring charges, any of which could harm our financial condition or operating results. Also, the anticipated benefits or value of our acquisitions and other strategic transactions may not materialize. In connection with our divestitures, we have agreed, and may in the future agree, to provide indemnification for certain potential liabilities, which may harm our financial condition or operating results.

If we were to lose the services of key personnel, we may not be able to execute our business strategy.

Our future success depends in large part upon the continued service of key members of our senior management team. For instance, Sundar Pichai is critical to the overall management of Alphabet and its subsidiaries and plays an important role in the development of our technology. He also plays a key role in maintaining our culture and setting our strategic direction. All of our executive officers and key employees are at-will employees, and we do not maintain any key-person life insurance policies. The loss of key personnel could seriously harm our business.

We rely on highly skilled personnel and, if we are unable to retain or motivate key personnel, hire qualified personnel, or maintain our corporate culture, we may not be able to grow effectively.

Our performance largely depends on the talents and efforts of highly skilled individuals. Our future success depends on our continuing ability to identify, hire, develop, motivate, and retain highly skilled personnel for all areas of our organization. Competition in our industry for qualified employees is intense, and certain of our competitors have directly targeted our employees. In addition, our compensation arrangements, such as our equity award programs, may not always be successful in attracting new employees and retaining and motivating our existing employees. Our continued ability to compete effectively depends on our ability to attract new employees and to retain and motivate our existing employees.

In addition, we believe that our corporate culture fosters innovation, creativity, and teamwork. As our organization grows, and we are required to implement more complex organizational management structures, particularly in light of our holding company structure, adverse changes to our corporate culture could harm our business operations.

In preparing our financial statements, we incorporate valuation methodologies that are subjective in nature and valuations may fluctuate over time.

We measure certain of our non-marketable equity and debt investments, certain other instruments including stock-based compensation awards settled in the stock of certain Other Bets, and certain assets and liabilities acquired in a business combination, at fair value on a nonrecurring basis. The determination of fair value involves use of appropriate valuation methods and certain unobservable inputs, require management judgment and estimation, and may change over time.

As it relates to our non-marketable investments, the market values can be negatively affected by liquidity, credit deterioration or losses, performance and financial results of the underlying companies, foreign exchange rates, changes in interest rates, including changes that may result from the implementation of new benchmark rates that replace LIBOR, the effect of new or changing regulations, the stock market in general, or other factors.

Since January 2018, we adjust the carrying value of our non-marketable equity investments to fair value for observable transactions of identical or similar investments of the same issuer or for impairments. All gains and losses on non-marketable equity securities, realized and unrealized, are recognized in other income (expense), which increases the volatility of our other income (expense).

As a result of these factors, the value or liquidity of our cash equivalents, as well as our marketable and non-marketable securities could decline and result in a material impairment, which could materially adversely affect our financial condition and operating results.

We could be subject to changes in tax rates, the adoption of new U.S. or international tax legislation, or exposure to additional tax liabilities.

Our future income taxes could be negatively affected by earnings being lower than anticipated in jurisdictions that have lower statutory tax rates and higher than anticipated in jurisdictions that have higher statutory tax rates, the net gains and losses recognized by legal entities on certain hedges and related hedged intercompany and other transactions under our foreign exchange risk management program, changes in the valuation of our deferred tax assets or liabilities, or changes in tax laws, regulations, or accounting principles (including changes in the interpretation of existing laws), as well as certain discrete items.

In addition, we are subject to regular review and audit by both domestic and foreign tax authorities. As a result, we have received, and may in the future receive, assessments in multiple jurisdictions, including in Europe, on various tax-related assertions, such as transfer-pricing adjustments or permanent-establishment claims. Any adverse outcome of such a review or audit could have a negative effect on our operating results and financial condition and could require us to change our business practices in a manner adverse to our business. It may also subject us to additional litigation and regulatory inquiries, resulting in the diversion of management's time and attention. In addition, the determination of our worldwide provision for income taxes and other tax liabilities requires significant judgment, and there are many transactions and calculations for which the ultimate tax determination is uncertain. Although we believe our estimates are reasonable, the ultimate tax outcome may differ from the amounts recorded in our financial statements and may materially affect our financial results in the period or periods for which such determination is made.

Furthermore, due to shifting economic and political conditions, tax policies, laws, or rates in various jurisdictions may be subject to significant changes in ways that impair our financial results. In particular, France, Italy, and other countries have enacted or are considering digital services taxes, which could lead to inconsistent and potentially overlapping international tax regimes. The Organization for Economic Cooperation and Development recently released a proposal relating to its initiative for modernizing international tax rules, with the goal of having different countries enact legislation to implement a modernized and aligned international tax framework, but there can be no guarantee that this will occur.

The trading price for our Class A common stock and non-voting Class C capital stock may continue to be volatile.

The trading price of our stock has at times experienced substantial price volatility and may continue to be volatile. For example, from January 1, 2019 through December 31, 2019, the closing price of our Class A common stock ranged from \$1,025.47 per share to \$1,362.47 per share, and the closing price of our Class C capital stock ranged from \$1,016.06 to \$1,361.17 per share.

In addition to the factors discussed in this report, the trading price of our Class A common stock and Class C capital stock may fluctuate widely in response to various factors, many of which are beyond our control, including, among others:

- Quarterly variations in our operating results or those of our competitors.
- Announcements by us or our competitors of acquisitions, divestitures, investments, new products, significant contracts, commercial relationships, or capital commitments.
- Recommendations by securities analysts or changes in earnings estimates.
- Announcements about our earnings that are not in line with analyst expectations, the risk of which is enhanced because it is our policy not to give guidance on earnings.
- Announcements by our competitors of their earnings that are not in line with analyst expectations.

- Commentary by industry and market professionals about our products, strategies, and other matters affecting our business and results, regardless of its accuracy.
- The volume of shares of Class A common stock and Class C capital stock available for public sale.
- Sales of Class A common stock and Class C capital stock by us or by our stockholders (including sales by our directors, executive officers, and other employees).
- Short sales, hedging, and other derivative transactions on shares of our Class A common stock and Class C capital stock.
- The perceived values of Class A common stock and Class C capital stock relative to one another.
- Any share repurchase program.

In addition, the stock market in general, which can be affected by various factors, including overall economic and political conditions, and the market for technology companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of those companies.

These broad market and industry factors may harm the market price of our Class A common stock and our Class C capital stock, regardless of our actual operating performance.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 2. PROPERTIES

Our headquarters are located in Mountain View, California. We also own and lease office and building space in the surrounding areas near our headquarters, which we believe is sufficient to accommodate anticipated future growth. In addition, we own and lease office/building space and research and development sites around the world, primarily in North America, Europe, South America, and Asia. We own and operate data centers in the U.S., Europe, South America, and Asia. We believe our existing facilities, both owned and leased, are in good condition and suitable for the conduct of our business.

ITEM 3. LEGAL PROCEEDINGS

For a description of our material pending legal proceedings, please see Note 10 “Commitments and Contingencies - Legal Matters” of the Notes to Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K, which is incorporated herein by reference.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II**ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES**

As of October 2, 2015, Alphabet Inc. became the successor issuer of Google Inc. pursuant to Rule 12g-3(a) under the Exchange Act. Our Class A common stock has been listed on the Nasdaq Global Select Market under the symbol "GOOG" since August 19, 2004 and under the symbol "GOOGL" since April 3, 2014. Prior to August 19, 2004, there was no public market for our stock. Our Class B common stock is neither listed nor traded. Our Class C capital stock has been listed on the Nasdaq Global Select Market under the symbol "GOOG" since April 3, 2014.

Holders of Record

As of December 31, 2019, there were approximately 2,455 and 2,030 stockholders of record of our Class A common stock and Class C capital stock, respectively. Because many of our shares of Class A common stock and Class C capital stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these record holders. As of December 31, 2019, there were approximately 66 stockholders of record of our Class B common stock.

Dividend Policy

We have never declared or paid any cash dividend on our common or capital stock. The primary use of capital continues to be to invest for the long term growth of the business. We regularly evaluate our cash and capital structure, including the size, pace and form of capital return to stockholders.

Issuer Purchases of Equity Securities

The following table presents information with respect to Alphabet's repurchases of Class C capital stock during the quarter ended December 31, 2019:

Period	Total Number of Shares Purchased (in thousands) ⁽¹⁾	Average Price Paid per Share ⁽²⁾	Total Number of Shares Purchased as Part of Publicly Announced Programs (in thousands) ⁽¹⁾	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Program (in millions)
October 1 - 31	1,970	\$ 1,229.02	1,970	\$ 24,470
November 1 - 30	1,626	\$ 1,304.00	1,626	\$ 22,350
December 1 - 31	1,164	\$ 1,337.16	1,164	\$ 20,793
Total	4,760		4,760	

⁽¹⁾ In January and July 2019, the board of directors of Alphabet authorized the company to repurchase up to an additional \$12.5 billion and \$25.0 billion of its Class C capital stock, respectively. Share repurchases pursuant to the January 2019 authorization were completed during the fourth quarter of 2019. The repurchases are being executed from time to time, subject to general business and market conditions and other investment opportunities, through open market purchases or privately negotiated transactions, including through Rule 10b5-1 plans. The repurchase program does not have an expiration date. Please refer to Note 11 of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K for additional information related to share repurchases.

⁽²⁾ Average price paid per share includes costs associated with the repurchases.

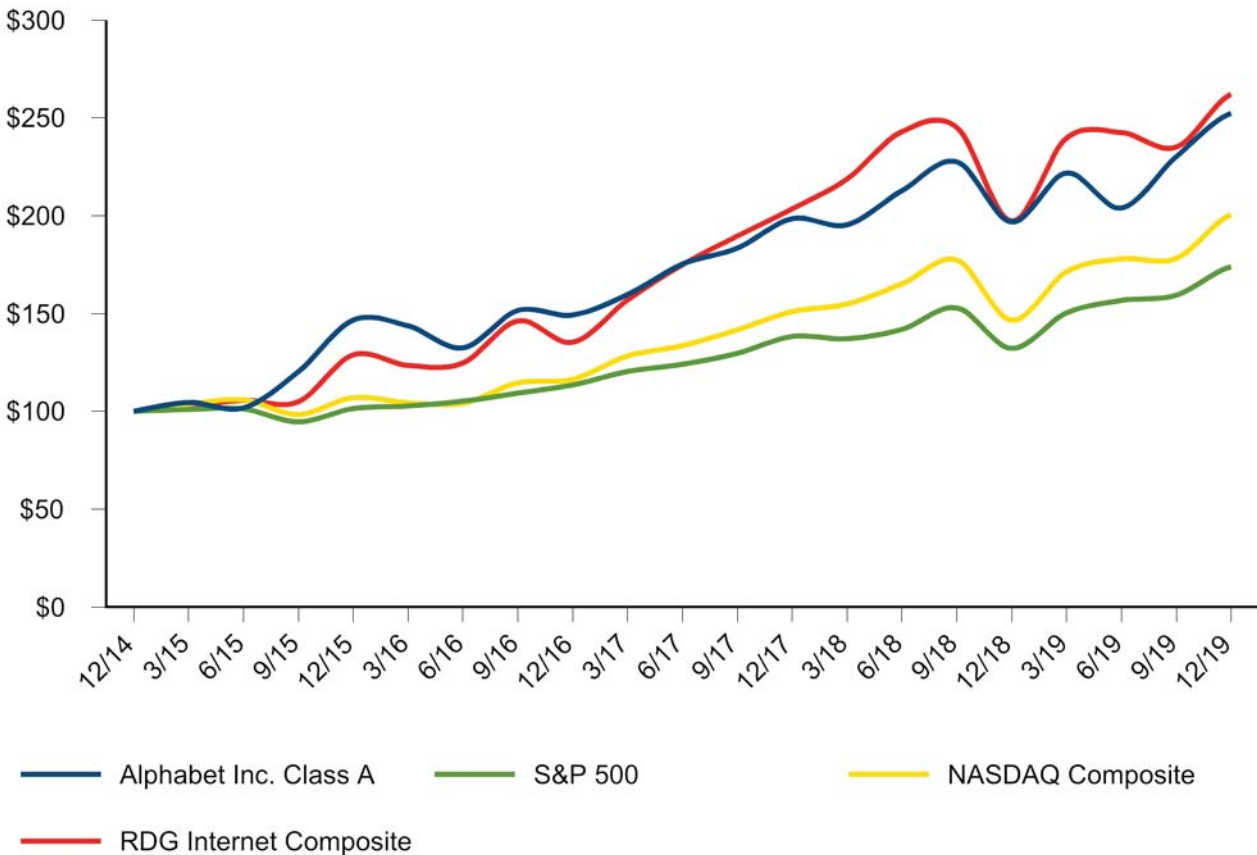
Stock Performance Graphs

The graph below matches Alphabet Inc. Class A's cumulative 5-Year total shareholder return on common stock with the cumulative total returns of the S&P 500 index, the NASDAQ Composite index, and the RDG Internet Composite index. The graph tracks the performance of a \$100 investment in our common stock and in each index (with the reinvestment of all dividends) from December 31, 2014 to December 31, 2019. The returns shown are based on historical results and are not intended to suggest future performance.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*

ALPHABET INC. CLASS A COMMON STOCK

Among Alphabet Inc., the S&P 500 Index, the
NASDAQ Composite Index, and the RDG Internet Composite Index



*\$100 invested on December 31, 2014 in stock or index, including reinvestment of dividends. Fiscal year ending December 31.

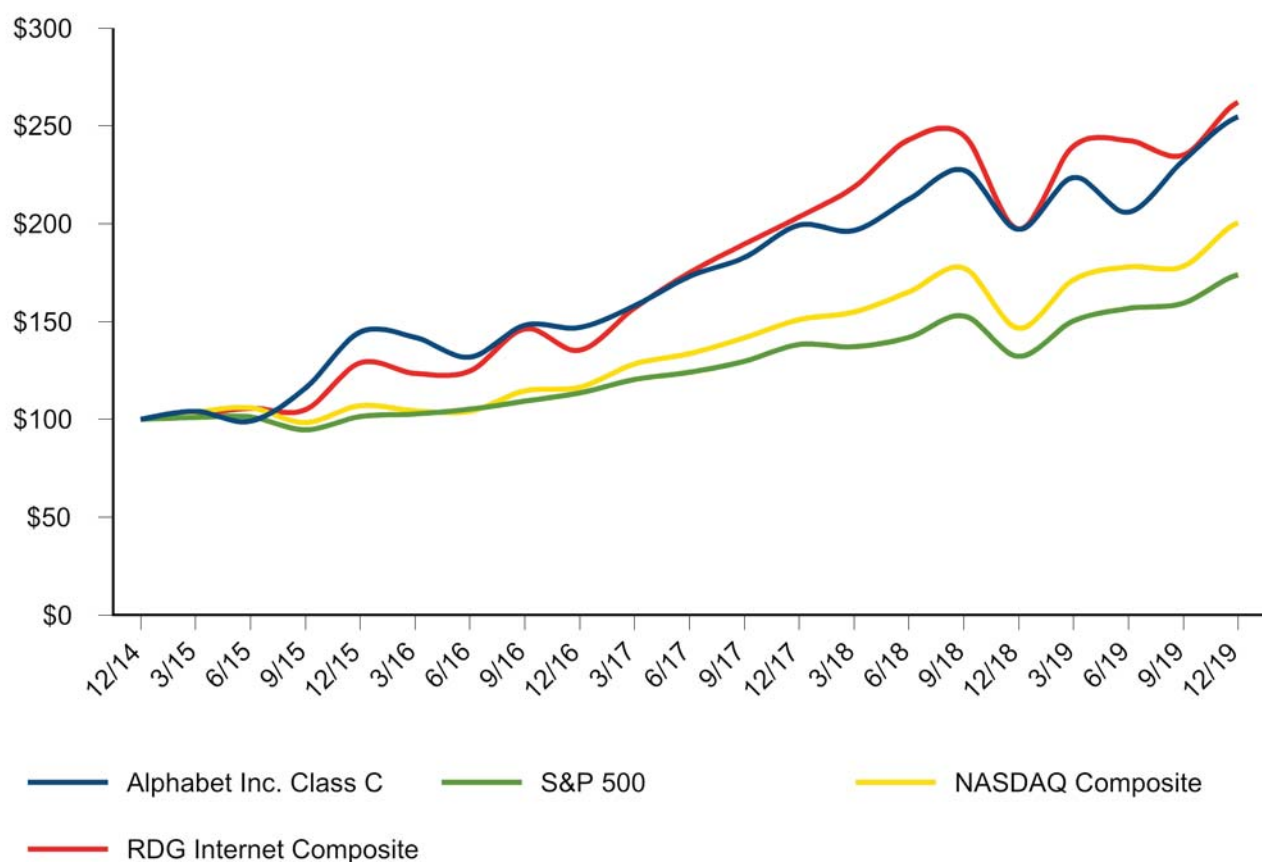
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The graph below matches Alphabet Inc. Class C's cumulative 5-Year total shareholder return on capital stock with the cumulative total returns of the S&P 500 index, the NASDAQ Composite index, and the RDG Internet Composite index. The graph tracks the performance of a \$100 investment in our Class C capital stock and in each index (with the reinvestment of all dividends) from December 31, 2014 to December 31, 2019. The returns shown are based on historical results and are not intended to suggest future performance.

COMPARISON OF CUMULATIVE TOTAL RETURN*

ALPHABET INC. CLASS C CAPITAL STOCK

Among Alphabet Inc., the S&P 500 Index, the
NASDAQ Composite Index, and the RDG Internet Composite Index



*\$100 invested on December 31, 2014 in stock or in index, including reinvestment of dividends. Fiscal year ending December 31.

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ITEM 6. SELECTED FINANCIAL DATA

The following selected consolidated financial data should be read in conjunction with Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and the related notes appearing in Item 8 “Financial Statements and Supplementary Data” of this Annual Report on Form 10-K. The historical results are not necessarily indicative of the results to be expected in any future period.

	Year Ended December 31,				
	2015	2016	2017	2018	2019
	(in millions, except per share amounts)				

Consolidated Statements of Income Data:

Revenues	\$ 74,989	\$ 90,272	\$ 110,855	\$ 136,819	\$ 161,857
Income from operations	\$ 19,360	\$ 23,737	\$ 26,178	\$ 27,524	\$ 34,231
Net income	\$ 16,348	\$ 19,478	\$ 12,662	\$ 30,736	\$ 34,343
Basic net income per share of Class A and B common stock	\$ 23.11	\$ 28.32	\$ 18.27	\$ 44.22	\$ 49.59
Basic net income per share of Class C capital stock	\$ 24.63	\$ 28.32	\$ 18.27	\$ 44.22	\$ 49.59
Diluted net income per share of Class A and B common stock	\$ 22.84	\$ 27.85	\$ 18.00	\$ 43.70	\$ 49.16
Diluted net income per share of Class C capital stock	\$ 24.34	\$ 27.85	\$ 18.00	\$ 43.70	\$ 49.16

	As of December 31,				
	2015	2016	2017	2018	2019
	(in millions)				

Consolidated Balance Sheet Data:

Cash, cash equivalents, and marketable securities	\$ 73,066	\$ 86,333	\$ 101,871	\$ 109,140	\$ 119,675
Total assets	\$ 147,461	\$ 167,497	\$ 197,295	\$ 232,792	\$ 275,909
Total long-term liabilities	\$ 7,820	\$ 11,705	\$ 20,610	\$ 20,544	\$ 29,246
Total stockholders’ equity	\$ 120,331	\$ 139,036	\$ 152,502	\$ 177,628	\$ 201,442

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Please read the following discussion and analysis of our financial condition and results of operations together with our consolidated financial statements and related notes included under Part II, Item 8 of this Annual Report on Form 10-K.

We have omitted discussion of 2017 results where it would be redundant to the discussion previously included in Part II, Item 7 of our 2018 Annual Report on Form 10-K, as amended.

Trends in Our Business

The following trends have contributed to the results of our consolidated operations, and we anticipate that they will continue to affect our future results:

- **Users' behaviors and advertising continue to shift online as the digital economy evolves.**

The continuing shift from an offline to online world has contributed to the growth of our business since inception, contributing to revenue growth, and we expect that this online shift will continue to benefit our business.

- **Users are increasingly using diverse devices and modalities to access our products and services, and our advertising revenues are increasingly coming from new formats.**

Our users are accessing the Internet via diverse devices and modalities, such as smartphones, wearables and smart home devices, and want to feel connected no matter where they are or what they are doing. We seek to expand our products and services to stay in front of these trends in order to maintain and grow our business.

We generate our advertising revenues increasingly from different channels, including mobile, and newer advertising formats, and the margins from the advertising revenues from these channels and newer products have generally been lower than those from traditional desktop search. Additionally, as the market for a particular device type or modality matures our revenues may be affected. For example, growth in the global smartphone market has slowed due to various factors, including increased market saturation in developed countries, which can affect our mobile advertising revenue growth rates.

We expect TAC paid to our distribution partners to increase as our revenues grow and to be affected by changes in device mix; geographic mix; partner mix; partner agreement terms; and the percentage of queries channeled through paid access points.

We expect these trends to continue to put pressure on our overall margins and affect our revenue growth rates.

- **As online advertising evolves, we continue to expand our product offerings which may affect our monetization.**

As interactions between users and advertisers change and as online user behavior evolves, we continue to expand and evolve our product offerings to serve their changing needs. Over time, we expect our monetization trends to fluctuate. For example, we have seen an increase in YouTube engagement ads, which monetize at a lower rate than traditional search ads.

- **As users in developing economies increasingly come online, our revenues from international markets continue to increase and movements in foreign exchange rates affect such revenues.**

The shift to online, as well as the advent of the multi-device world, has brought opportunities outside of the U.S., including in emerging markets, and we continue to develop localized versions of our products and relevant advertising programs useful to our users in these markets. This has led to a trend of increased revenues from international markets over time and we expect that our results will continue to be affected by our performance in these markets, particularly as low-cost mobile devices become more available. This trend could impact our margins as developing markets initially monetize at a lower rate than more mature markets.

Our international revenues represent a significant portion of our revenues and are subject to fluctuations in foreign currency exchange rates relative to the U.S. dollar. While we have a foreign exchange risk management program designed to reduce our exposure to these fluctuations, this program does not fully offset their effect on our revenues and earnings.

- **The portion of our revenues that we derive from non-advertising revenues is increasing and may affect margins.**

Non-advertising revenues have grown over time. We expect this trend to continue as we focus on expanding our offerings to our users through products and services like Google Cloud, Google Play, hardware products, and YouTube subscriptions. Across these initiatives, we currently derive non-advertising revenues primarily from sales of apps, in-app purchases, digital content products, and hardware; and licensing and service fees, including fees received for Google Cloud offerings and subscription and other services. The margins on these revenues vary significantly and may be lower than the margins on our advertising revenues. A number of our Other Bets initiatives are in their initial development stages, and as such, the sources of revenues from these businesses could change over time and the revenues could be volatile.

- **As we continue to serve our users and expand our businesses, we will invest heavily in operating and capital expenditures.**

We continue to make significant R&D investments in areas of strategic focus such as advertising, cloud, machine learning, and search, as well as in new products and services. In addition, our capital expenditures have grown over the last several years. We expect this trend to continue in the long term as we invest heavily in land and buildings for data centers and offices, and information technology infrastructure, which includes servers and network equipment.

In addition, acquisitions remain an important part of our strategy and use of capital, and we expect to continue to spend cash on acquisitions and other investments. These acquisitions generally enhance the breadth and depth of our offerings, as well as expand our expertise in engineering and other functional areas.

- **Our employees are critical to our success and we expect to continue investing in them.**

Our employees are among our best assets and are critical for our continued success. We expect to continue hiring talented employees around the globe and to provide competitive compensation programs to our employees.

Executive Overview of Results

Below are our key financial results for the fiscal year ended December 31, 2019 (consolidated unless otherwise noted):

- Revenues of \$161.9 billion and revenue growth of 18% year over year, constant currency revenue growth of 20% year over year.
- Google segment revenues of \$160.7 billion with revenue growth of 18% year over year and Other Bets revenues of \$659 million with revenue growth of 11% year over year.
- Revenues from the United States, EMEA, APAC, and Other Americas were \$74.8 billion, \$50.6 billion, \$26.9 billion, and \$9.0 billion, respectively.
- Cost of revenues was \$71.9 billion, consisting of TAC of \$30.1 billion and other cost of revenues of \$41.8 billion. Our TAC as a percentage of advertising revenues (TAC rate) was 22.3%.
- Operating expenses (excluding cost of revenues) were \$55.7 billion.
- Income from operations was \$34.2 billion.
- Other income (expense), net, was \$5.4 billion.
- Effective tax rate was 13%.
- Net income was \$34.3 billion with diluted net income per share of \$49.16.
- Operating cash flow was \$54.5 billion.
- Capital expenditures were \$23.5 billion.
- Number of employees was 118,899 as of December 31, 2019. The majority of new hires during the year were engineers and product managers. By product area, the largest headcount additions were in Google Cloud and Search.

Information about Segments

We operate our business in multiple operating segments. Google is our only reportable segment. None of our other segments meet the quantitative thresholds to qualify as reportable segments; therefore, the other operating segments are combined and disclosed as Other Bets.

Our reported segments are:

- **Google** – Google includes our main products such as ads, Android, Chrome, hardware, Google Cloud, Google Maps, Google Play, Search, and YouTube. Our technical infrastructure is also included in Google. Google generates revenues primarily from advertising; sales of apps, in-app purchases, digital content products, and hardware; and licensing and service fees, including fees received for Google Cloud offerings and subscription-based products.
- **Other Bets** – Other Bets is a combination of multiple operating segments that are not individually material. Other Bets includes Access, Calico, CapitalG, GV, Verily, Waymo, and X, among others. Revenues from the Other Bets are derived primarily through the sales of internet and TV services through Access as well as licensing and R&D services through Verily.

Revenues

The following table presents our revenues by segment and revenue source (in millions). Certain amounts in prior periods have been reclassified to conform with current period presentation.

	Year Ended December 31,		
	2017	2018	2019
Google Search & other	\$ 69,811	\$ 85,296	\$ 98,115
YouTube ads ⁽¹⁾	8,150	11,155	15,149
Google properties	77,961	96,451	113,264
Google Network Members' properties	17,616	20,010	21,547
Google advertising	95,577	116,461	134,811
Google Cloud	4,056	5,838	8,918
Google other ⁽¹⁾	10,914	14,063	17,014
Google revenues	110,547	136,362	160,743
Other Bets revenues	477	595	659
Hedging gains (losses)	(169)	(138)	455
Total revenues	\$ 110,855	\$ 136,819	\$ 161,857

⁽¹⁾ YouTube non-advertising revenues are included in Google other revenues.

Google advertising revenues

Our advertising revenue growth, as well as the change in paid clicks and cost-per-click on Google properties and the change in impressions and cost-per-impression on Google Network Members' properties and the correlation between these items, have been affected and may continue to be affected by various factors, including:

- advertiser competition for keywords;
- changes in advertising quality, formats, delivery or policy;
- changes in device mix;
- changes in foreign currency exchange rates;
- fees advertisers are willing to pay based on how they manage their advertising costs;
- general economic conditions;
- seasonality; and
- traffic growth in emerging markets compared to more mature markets and across various advertising verticals and channels.

Our advertising revenue growth rate has been affected over time as a result of a number of factors, including challenges in maintaining our growth rate as revenues increase to higher levels; changes in our product mix; changes in advertising quality or formats and delivery; the evolution of the online advertising market; increasing competition; our investments in new business strategies; query growth rates; and shifts in the geographic mix of our revenues. We also expect that our revenue growth rate will continue to be affected by evolving user preferences, the acceptance by users of our products and services as they are delivered on diverse devices and modalities, our ability to create a seamless experience for both users and advertisers, and movements in foreign currency exchange rates.

The following table presents our Google advertising revenues (in millions):

	Year Ended December 31,		
	2017	2018	2019
Google Search & other	\$ 69,811	\$ 85,296	\$ 98,115
YouTube ads ⁽¹⁾	8,150	11,155	15,149
Google Network Members' properties	17,616	20,010	21,547
Google advertising	\$ 95,577	\$ 116,461	\$ 134,811
Google advertising revenues as a percentage of Google segment revenues	86.5%	85.4%	83.9%

⁽¹⁾ YouTube non-advertising revenues are included in Google other revenues.

Google advertising revenues are generated on our Google properties (including Google Search & other properties and YouTube) and Google Network Members' properties. Google advertising revenues consist primarily of the following:

- Google Search & other consists of revenues generated on Google search properties (including revenues from traffic generated by search distribution partners who use Google.com as their default search in browsers, toolbars, etc.) and other Google owned and operated properties like Gmail, Google Maps, and Google Play;
- YouTube ads consists of revenues generated primarily on YouTube properties; and
- Google Network Members' properties consist of revenues generated primarily on Google Network Members' properties participating in AdMob, AdSense, and Google Ad Manager.

Google Search & other

Our Google Search & other revenues increased \$12,819 million from 2018 to 2019. The growth was primarily driven by interrelated factors including increases in search queries resulting from ongoing growth in user adoption and usage, primarily on mobile devices, continued growth in advertiser activity, and improvements we have made in ad formats and delivery. Revenue growth was partially offset by the general strengthening of the U.S. dollar compared to certain foreign currencies.

Our Google Search & other revenues increased \$15,485 million from 2017 to 2018. The growth was primarily driven by increases in mobile search resulting from ongoing growth in user adoption and usage, as well as continued growth in advertiser activity. Growth was also driven by improvements in ad formats and delivery, primarily on desktop. Additionally, revenue growth was favorably affected by the general weakening of the U.S. dollar compared to certain foreign currencies.

YouTube ads

YouTube ads revenues increased \$3,994 million from 2018 to 2019 and increased \$3,005 million from 2017 to 2018. The largest contributors to the growth during both periods were our direct response and brand advertising products, both of which benefited from improvements to ad formats and delivery and increased advertiser spending.

Google Network Members' properties

Our Google Network Members' properties revenues increased \$1,537 million from 2018 to 2019. The growth was primarily driven by strength in both AdManager (included in what was previously referred to as programmatic advertising buying) and AdMob, partially offset by the general strengthening of the U.S. dollar compared to certain foreign currencies.

Our Google Network Members' properties revenues increased \$2,394 million from 2017 to 2018, primarily driven by strength in both AdMob and AdManager, offset by a decline in our traditional AdSense businesses. Additionally, the growth was favorably affected by the general weakening of the U.S. dollar compared to certain foreign currencies.

Use of Monetization Metrics

Paid clicks for our Google properties represent engagement by users and include clicks on advertisements by end-users related to searches on Google.com and other owned and operated properties including Gmail, Google Maps, and Google Play; and viewed YouTube engagement ads (certain YouTube ad formats are not included in our click or impression based metrics). Impressions for our Google Network Members' properties include impressions displayed to users served on Google Network Members' properties participating primarily in AdMob, AdSense and Google Ad Manager.

Cost-per-click is defined as click-driven revenues divided by our total number of paid clicks and represents the average amount we charge advertisers for each engagement by users.

Cost-per-impression is defined as impression-based and click-based revenues divided by our total number of impressions and represents the average amount we charge advertisers for each impression displayed to users.

As our business evolves, we periodically review, refine and update our methodologies for monitoring, gathering, and counting the number of paid clicks on our Google properties and the number of impressions on Google Network Members' properties and for identifying the revenues generated by click activity on our Google properties and the revenues generated by impression activity on Google Network Members' properties.

Google properties

The following table presents changes in our paid clicks and cost-per-click (expressed as a percentage):

	Year Ended December 31,	
	2018	2019
Paid clicks change	62 %	23 %
Cost-per-click change	(25)%	(7)%

The number of paid clicks through our advertising programs on Google properties increased from 2018 to 2019 due to growth in views of YouTube engagement ads; increase in clicks due to interrelated factors, including an increase in search queries resulting from ongoing growth in user adoption and usage, primarily on mobile devices; continued growth in advertiser activity; and improvements we have made in ad formats and delivery. The positive effect on our revenues from an increase in paid clicks was partially offset by a decrease in the cost-per-click paid by our advertisers. The decrease in cost-per-click was primarily driven by continued growth in YouTube engagement ads where cost-per-click remains lower than on our other advertising platforms. Cost-per-click was also affected by changes in device mix, geographic mix, ongoing product changes, product mix, property mix, and fluctuations of the U.S. dollar compared to certain foreign currencies.

Google Network Members' properties

The following table presents changes in our impressions and cost-per-impression (expressed as a percentage):

	Year Ended December 31,	
	2018	2019
Impressions change	2%	9%
Cost-per-impression change	12%	1%

Impressions increased from 2018 to 2019 primarily due to growth in AdManager. The cost-per-impression was relatively unchanged due to a combination of factors including ongoing product and policy changes and improvements we have made in ad formats and delivery, changes in device mix, geographic mix, product mix, property mix, and fluctuations of the U.S. dollar compared to certain foreign currencies.

Google Cloud

The following table presents our Google Cloud revenues (in millions):

	Year Ended December 31,		
	2017	2018	2019
Google Cloud	\$ 4,056	\$ 5,838	\$ 8,918
Google Cloud revenues as a percentage of Google segment revenues	3.7%	4.3%	5.5%

Google Cloud revenues consist primarily of revenues from Cloud offerings, including

- Google Cloud Platform (GCP), which includes infrastructure, data and analytics, and other services
- G Suite productivity tools; and
- other enterprise cloud services.

Our Google Cloud revenues increased \$3,080 million from 2018 to 2019 and increased \$1,782 million from 2017 to 2018. The growth during both periods was primarily driven by continued strength in our GCP and G Suite offerings. Our infrastructure and our data and analytics platform products have been the largest drivers of growth in GCP.

Google other revenues

The following table presents our Google other revenues (in millions):

	Year Ended December 31,		
	2017	2018	2019
Google other	10,914	14,063	17,014
Google other revenues as a percentage of Google segment revenues	9.9%	10.3%	10.6%

Google other revenues consist primarily of revenues from:

- Google Play, which includes revenues from sales of apps and in-app purchases (which we recognize net of payout to developers) and digital content sold in the Google Play store;
- hardware, including Google Nest home products, Pixelbooks, Pixel phones and other devices;
- YouTube non-advertising, including YouTube Premium and YouTube TV subscriptions and other services; and
- other products and services.

Our Google other revenues increased \$2,951 million from 2018 to 2019. The growth was primarily driven by Google Play and YouTube subscriptions.

Our Google other revenues increased \$3,149 million from 2017 to 2018. The growth was primarily driven by Google Play and hardware.

Over time, our growth rate for Google Cloud and Google other revenues may be affected by the seasonality associated with new product and service launches and market dynamics.

Other Bets

The following table presents our Other Bets revenues (in millions):

	Year Ended December 31,		
	2017	2018	2019
Other Bets revenues	\$ 477	\$ 595	\$ 659
Other Bets revenues as a percentage of total revenues	0.4%	0.4%	0.4%

Other Bets revenues consist primarily of revenues from sales of Access internet and TV services and Verily licensing and R&D services.

Revenues by Geography

The following table presents our revenues by geography as a percentage of revenues, determined based on the addresses of our customers:

	Year Ended December 31,	
	2018	2019
United States	46%	46%
EMEA	33%	31%
APAC	15%	17%
Other Americas	6%	6%

For further details on revenues by geography, see Note 2 of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K.

Use of Constant Currency Revenues and Constant Currency Revenue Growth

The effect of currency exchange rates on our business is an important factor in understanding period to period comparisons. Our international revenues are favorably affected as the U.S. dollar weakens relative to other foreign currencies, and unfavorably affected as the U.S. dollar strengthens relative to other foreign currencies. Our revenues are also favorably affected by net hedging gains and unfavorably affected by net hedging losses.

We use non-GAAP constant currency revenues and constant currency revenue growth for financial and operational decision-making and as a means to evaluate period-to-period comparisons. We believe the presentation of results on a constant currency basis in addition to U.S. Generally Accepted Accounting Principles (GAAP) results helps improve

the ability to understand our performance because they exclude the effects of foreign currency volatility that are not indicative of our core operating results.

Constant currency information compares results between periods as if exchange rates had remained constant period over period. We define constant currency revenues as total revenues excluding the effect of foreign exchange rate movements and hedging activities, and use it to determine the constant currency revenue growth on a year-on-year basis. Constant currency revenues are calculated by translating current period revenues using prior period exchange rates, as well as excluding any hedging effects realized in the current period.

Constant currency revenue growth (expressed as a percentage) is calculated by determining the increase in current period revenues over prior period revenues where current period foreign currency revenues are translated using prior period exchange rates and hedging effects are excluded from revenues of both periods.

These results should be considered in addition to, not as a substitute for, results reported in accordance with GAAP. Results on a constant currency basis, as we present them, may not be comparable to similarly titled measures used by other companies and are not a measure of performance presented in accordance with GAAP.

The following table presents the foreign exchange effect on our international revenues and total revenues (in millions):

	Year Ended December 31,	
	2018	2019
EMEA revenues	\$ 44,739	\$ 50,645
Exclude foreign exchange effect on current period revenues using prior year rates	(1,325)	2,397
EMEA constant currency revenues	\$ 43,414	\$ 53,042
Prior period EMEA revenues	\$ 36,236	\$ 44,739
EMEA revenue growth	23%	13%
EMEA constant currency revenue growth	20%	19%
APAC revenues	\$ 21,341	\$ 26,928
Exclude foreign exchange effect on current period revenues using prior year rates	(49)	388
APAC constant currency revenues	\$ 21,292	\$ 27,316
Prior period APAC revenues	\$ 16,192	\$ 21,341
APAC revenue growth	32%	26%
APAC constant currency revenue growth	31%	28%
Other Americas revenues	\$ 7,608	\$ 8,986
Exclude foreign exchange effect on current period revenues using prior year rates	404	541
Other Americas constant currency revenues	\$ 8,012	\$ 9,527
Prior period Other Americas revenues	\$ 6,147	\$ 7,608
Other Americas revenue growth	24%	18%
Other Americas constant currency revenue growth	30%	25%
United States revenues	\$ 63,269	\$ 74,843
United States revenue growth	21%	18%
Hedging gains (losses)	(138)	455
Total revenues	\$ 136,819	\$ 161,857
Total constant currency revenues	\$ 135,987	\$ 164,728
Prior period revenues, excluding hedging effect ⁽¹⁾	\$ 111,024	\$ 136,957
Total revenue growth	23%	18%
Total constant currency revenue growth	22%	20%

⁽¹⁾ Total revenues and hedging gains (losses) for the year ended December 31, 2017 were \$110,855 million and \$(169) million, respectively.

Our EMEA revenue growth from 2018 to 2019 was unfavorably affected by changes in foreign currency exchange rates, primarily due to the U.S. dollar strengthening relative to the Euro and British pound.

Our APAC revenue growth from 2018 to 2019 was unfavorably affected by changes in foreign currency exchange rates primarily due to the U.S. dollar strengthening relative to the Australian dollar and South Korean won, partially offset by the U.S. dollar weakening relative to the Japanese yen.

Our Other Americas revenue growth from 2018 to 2019 was unfavorably affected by changes in foreign currency exchange rates, primarily due to the U.S. dollar strengthening relative to the Brazilian real and Argentine peso.

Costs and Expenses

Cost of Revenues

Cost of revenues consists of TAC which are paid to Google Network Members primarily for ads displayed on their properties and amounts paid to our distribution partners who make available our search access points and services. Our distribution partners include browser providers, mobile carriers, original equipment manufacturers, and software developers.

The cost of revenues as a percentage of revenues generated from ads placed on Google Network Members' properties are significantly higher than the cost of revenues as a percentage of revenues generated from ads placed on Google properties because most of the advertiser revenues from ads served on Google Network Members' properties are paid as TAC to our Google Network Members.

Additionally, other cost of revenues (which is the cost of revenues excluding TAC) includes the following:

- Content acquisition costs primarily related to payments to content providers from whom we license video and other content for distribution on YouTube advertising and subscription services and Google Play (we pay fees to these content providers based on revenues generated or a flat fee);
- Expenses associated with our data centers and other operations (including bandwidth, compensation expenses (including stock-based compensation (SBC)), depreciation, energy, and other equipment costs); and
- Inventory related costs for hardware we sell.

The following tables present our cost of revenues, including TAC (in millions):

	Year Ended December 31,	
	2018	2019
TAC	\$ 26,726	\$ 30,089
Other cost of revenues	32,823	41,807
Total cost of revenues	\$ 59,549	\$ 71,896
Total cost of revenues as a percentage of revenues	43.5%	44.4%

Cost of revenues increased \$12,347 million from 2018 to 2019. The increase was due to increases in other cost of revenues and TAC of \$8,984 million and \$3,363 million, respectively.

The increase in other cost of revenues from 2018 to 2019 was due to an increase in data center and other operations costs. Additionally, there was an increase in content acquisition costs for YouTube consistent with the growth in YouTube revenues.

The increase in TAC from 2018 to 2019 was due to increases in TAC paid to distribution partners and to Google Network Members, primarily driven by growth in revenues subject to TAC. The TAC rate decreased from 22.9% to 22.3%, primarily due to the favorable revenue mix shift from Google Network Members' properties to Google properties. The TAC rate on Google properties revenues increased primarily due to the ongoing shift to mobile, which carries higher TAC because more mobile searches are channeled through paid access points. The TAC rate on Google Network revenues decreased primarily due to changes in product mix to products that carry a lower TAC rate.

Over time, cost of revenues as a percentage of total revenues may be affected by a number of factors, including the following:

- The amount of TAC paid to Google Network Members, which is affected by a combination of factors such as geographic mix, product mix, revenue share terms, and fluctuations of the U.S. dollar compared to certain foreign currencies;
- The amount of TAC paid to distribution partners, which is affected by changes in device mix, geographic mix, partner mix, partner agreement terms such as revenue share arrangements, and the percentage of queries channeled through paid access points;
- Relative revenue growth rates of Google properties and Google Network Members' properties;
- Costs associated with our data centers and other operations to support ads, Google Cloud, Search, YouTube and other products;
- Content acquisition costs, which are primarily affected by the relative growth rates in our YouTube advertising and subscription revenues;
- Costs related to hardware sales; and
- Increased proportion of non-advertising revenues, which generally have higher costs of revenues, relative to our advertising revenues.

Research and Development

The following table presents our R&D expenses (in millions):

	Year Ended December 31,	
	2018	2019
Research and development expenses	\$ 21,419	\$ 26,018
Research and development expenses as a percentage of revenues	15.7%	16.1%

R&D expenses consist primarily of:

- Compensation expenses (including SBC) and facilities-related costs for engineering and technical employees responsible for R&D of our existing and new products and services;
- Depreciation expenses;
- Equipment-related expenses; and
- Professional services fees primarily related to consulting and outsourcing services.

R&D expenses increased \$4,599 million from 2018 to 2019. The increase was primarily due to an increase in compensation expenses (including SBC) and facilities-related costs of \$3,519 million, largely resulting from a 23% increase in headcount.

Over time, R&D expenses as a percentage of revenues may be affected by a number of factors including continued investment in ads, Android, Chrome, Google Cloud, Google Play, hardware, machine learning, Other Bets, and Search.

Sales and Marketing

The following table presents our sales and marketing expenses (in millions):

	Year Ended December 31,	
	2018	2019
Sales and marketing expenses	\$ 16,333	\$ 18,464
Sales and marketing expenses as a percentage of revenues	11.9%	11.4%

Sales and marketing expenses consist primarily of:

- Advertising and promotional expenditures related to our products and services; and
- Compensation expenses (including SBC) and facilities-related costs for employees engaged in sales and marketing, sales support, and certain customer service functions.

Sales and marketing expenses increased \$2,131 million from 2018 to 2019. The increase was primarily due to an increase in compensation expenses (including SBC) and facilities-related costs of \$1,371 million, largely resulting from a 15% increase in headcount. In addition, there was an increase in advertising and promotional expenses of \$402 million.

Over time, sales and marketing expenses as a percentage of revenues may be affected by a number of factors including the seasonality associated with new product and service launches.

General and Administrative

The following table presents our general and administrative expenses (in millions):

	Year Ended December 31,	
	2018	2019
General and administrative expenses	\$ 6,923	\$ 9,551
General and administrative expenses as a percentage of revenues	5.1%	5.9%

General and administrative expenses consist primarily of:

- Compensation expenses (including SBC) and facilities-related costs for employees in our finance, human resources, information technology, and legal organizations;
- Depreciation expenses;
- Equipment-related expenses;
- Legal-related expenses; and

- Professional services fees primarily related to audit, information technology consulting, outside legal, and outsourcing services.

General and administrative expenses increased \$2,628 million from 2018 to 2019. The increase was primarily due to an increase in legal-related expenses of \$1,157 million, including a charge of \$554 million from a legal settlement in 2019 and the effect of a legal settlement gain recorded in 2018. Additionally, there was an increase in compensation expenses (including SBC) and facilities-related costs of \$687 million, largely resulting from a 19% increase in headcount.

Performance fees of \$1,203 million have been reclassified from general and administrative expenses to other income (expense), net, for 2018 to conform with current period presentation. See Note 7 of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K for further details.

Over time, general and administrative expenses as a percentage of revenues may be affected by discrete items such as legal settlements.

European Commission Fines

In July 2018, the EC announced its decision that certain provisions in Google's Android-related distribution agreements infringed European competition law. The EC decision imposed a €4.3 billion (\$5.1 billion as of June 30, 2018) fine, which was accrued in the second quarter of 2018.

In March 2019, the EC announced its decision that certain contractual provisions in agreements that Google had with AdSense for Search partners infringed European competition law. The EC decision imposed a €1.5 billion (\$1.7 billion as of March 20, 2019) fine, which was accrued in the first quarter of 2019.

Please refer to Note 10 of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K for further information.

Other Income (Expense), Net

The following table presents other income (expense), net, (in millions):

	Year Ended December 31,	
	2018	2019
Other income (expense), net	\$ 7,389	\$ 5,394
Other income (expense), net, as a percentage of revenues	5.4%	3.3%

Other income (expense), net, decreased \$1,995 million from 2018 to 2019. This decrease was primarily driven by a decrease in gains on equity securities, which were \$2,649 million in 2019 as compared to \$5,460 million in 2018. The majority of the gains in both periods were unrealized. The effect of the decrease in gains on equity securities was partially offset by a decrease in performance fees. The decrease in other income (expense) was also driven by a decrease in gains on debt securities primarily due to an unrealized gain recognized in 2018 resulting from the modification of the terms of a non-marketable debt security.

Performance fees of \$1,203 million have been reclassified from general and administrative expenses to other income (expense), net, for 2018 to conform with current period presentation. See Note 7 of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K for further details.

Over time, other income (expense), net, as a percentage of revenues may be affected by market dynamics and other factors. Equity values generally change daily for marketable equity securities and upon the occurrence of observable price changes or upon impairment of non-marketable equity securities. In addition, volatility in the global economic climate and financial markets could result in a significant change in the value of our equity securities. Fluctuations in the value of these investments has, and we expect will continue to, contribute to volatility of OI&E in future periods. For additional information about equity investments, see Note 1 and Note 3 of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K.

Provision for Income Taxes

The following table presents our provision for income taxes (in millions) and effective tax rate:

	Year Ended December 31,	
	2018	2019
Provision for income taxes	\$ 4,177	\$ 5,282
Effective tax rate	12.0%	13.3%

Our provision for income taxes and our effective tax rate increased from 2018 to 2019, due to discrete events in 2018 and 2019. In 2018, we released our deferred tax asset valuation allowance related to gains on equity securities and recognized the benefits of the U.S. Tax Cuts and Jobs Act ("Tax Act"). In 2019, we recognized an increase in discrete benefits related to the resolution of multi-year audits, partially offset by the reversal of Altera tax benefit as a result of the U.S. Court of Appeals decision. See Note 14 of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K for further information.

As of December 31, 2019, we have simplified our corporate legal entity structure and now license intellectual property from the U.S. that was previously licensed from Bermuda. This will affect our geographic mix of earnings.

We expect our future effective tax rate to be affected by the geographic mix of earnings in countries with different statutory rates. Additionally, our future effective tax rate may be affected by changes in the valuation of our deferred tax assets or liabilities, or changes in tax laws, regulations, or accounting principles, as well as certain discrete items.

Quarterly Results of Operations

The following tables presenting our quarterly results of operations should be read in conjunction with the consolidated financial statements and related notes included in Part II, Item 8 of this Annual Report on Form 10-K. We have prepared the unaudited information on the same basis as our audited consolidated financial statements. Our operating results for any quarter are not necessarily indicative of results for any future quarters or for a full year.

The following table presents our unaudited quarterly results of operations for the eight quarters ended December 31, 2019. This table includes all adjustments, consisting only of normal recurring adjustments, that we consider necessary for a fair presentation of our consolidated financial position and operating results for the quarters presented. Seasonal fluctuations in internet usage and advertiser expenditures, underlying business trends such as traditional retail seasonality and macroeconomic conditions have affected, and are likely to continue to affect, our business. Commercial queries typically increase significantly in the fourth quarter of each year. These seasonal trends have caused, and will likely continue to cause, fluctuations in our quarterly results, including fluctuations in sequential revenue growth rates.

	Quarter Ended							
	Mar 31, 2018	Jun 30, 2018	Sept 30, 2018	Dec 31, 2018	Mar 31, 2019	Jun 30, 2019	Sept 30, 2019	Dec 31, 2019
(In millions, except per share amounts) (unaudited)								
Consolidated Statements of Income Data:								
Revenues	\$ 31,146	\$ 32,657	\$ 33,740	\$ 39,276	\$ 36,339	\$ 38,944	\$ 40,499	\$ 46,075
Costs and expenses:								
Cost of revenues	13,467	13,883	14,281	17,918	16,012	17,296	17,568	21,020
Research and development	5,039	5,114	5,232	6,034	6,029	6,213	6,554	7,222
Sales and marketing	3,604	3,780	3,849	5,100	3,905	4,212	4,609	5,738
General and administrative	1,403	1,764	1,753	2,003	2,088	2,043	2,591	2,829
European Commission fines	0	5,071	0	0	1,697	0	0	0
Total costs and expenses	23,513	29,612	25,115	31,055	29,731	29,764	31,322	36,809
Income from operations	7,633	3,045	8,625	8,221	6,608	9,180	9,177	9,266
Other income (expense), net	2,910	1,170	1,458	1,851	1,538	2,967	(549)	1,438
Income from continuing operations before income taxes	10,543	4,215	10,083	10,072	8,146	12,147	8,628	10,704
Provision for income taxes	1,142	1,020	891	1,124	1,489	2,200	1,560	33
Net income	<u>\$ 9,401</u>	<u>\$ 3,195</u>	<u>\$ 9,192</u>	<u>\$ 8,948</u>	<u>\$ 6,657</u>	<u>\$ 9,947</u>	<u>\$ 7,068</u>	<u>\$ 10,671</u>
Basic net income per share of Class A and B common stock and Class C capital stock	\$ 13.53	\$ 4.60	\$ 13.21	\$ 12.87	\$ 9.58	\$ 14.33	\$ 10.20	\$ 15.49
Diluted net income per share of Class A and B common stock and Class C capital stock	\$ 13.33	\$ 4.54	\$ 13.06	\$ 12.77	\$ 9.50	\$ 14.21	\$ 10.12	\$ 15.35

Capital Resources and Liquidity

As of December 31, 2019, we had \$119.7 billion in cash, cash equivalents, and marketable securities. Cash equivalents and marketable securities are comprised of time deposits, money market funds, highly liquid government bonds, corporate debt securities, mortgage-backed and asset-backed securities and marketable equity securities.

As of December 31, 2019, we had long-term taxes payable of \$7.3 billion related to a one-time transition tax payable incurred as a result of the Tax Act. As permitted by the Tax Act, we will pay the transition tax in annual interest-free installments through 2025.

In 2017, 2018 and 2019, the EC announced decisions that certain actions taken by Google infringed European competition law and imposed fines of €2.4 billion (\$2.7 billion as of June 27, 2017), €4.3 billion (\$5.1 billion as of June 30, 2018), and €1.5 billion (\$1.7 billion as of March 20, 2019), respectively. While each EC decision is under appeal, we included the fines in accrued expenses and other current liabilities on our Consolidated Balance Sheets as we provided bank guarantees (in lieu of a cash payment) for the fines.

In November 2019, we entered into an agreement to acquire Fitbit, a leading wearables brand, for \$7.35 per share, representing a total purchase price of approximately \$2.1 billion as of the date of the agreement. The acquisition of Fitbit is expected to be completed in 2020, subject to customary closing conditions, including the receipt of regulatory approvals.

Our principal sources of liquidity are our cash, cash equivalents, and marketable securities, as well as the cash flow that we generate from our operations. The primary use of capital continues to be to invest for the long term growth of the business. We regularly evaluate our cash and capital structure, including the size, pace and form of capital return to stockholders.

We have a short-term debt financing program of up to \$5.0 billion through the issuance of commercial paper. Net proceeds from this program are used for general corporate purposes. We had no commercial paper outstanding as of December 31, 2019. We have \$4.0 billion of revolving credit facilities expiring in July 2023 with no amounts outstanding as of December 31, 2019. The interest rate for the credit facilities is determined based on a formula using certain market rates. We believe that our sources of funding will be sufficient to satisfy our currently anticipated cash requirements including capital expenditures, working capital requirements, potential acquisitions and other liquidity requirements through at least the next 12 months.

As of December 31, 2019, we have senior unsecured notes outstanding due in 2021, 2024, and 2026 with a total carrying value of \$4.0 billion.

As of December 31, 2019, we had remaining authorization of \$20.8 billion for repurchase of Class C capital stock. The repurchases are being executed from time to time, subject to general business and market conditions and other investment opportunities, through open market purchases or privately negotiated transactions, including through Rule 10b5-1 plans. The repurchase program does not have an expiration date. Please refer to Note 11 of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K for additional information related to share repurchases.

We continue to make significant investments in land and buildings for data centers and offices and information technology infrastructure through purchases of property and equipment and lease arrangements to provide capacity for the growth of our business. During the year ended December 31, 2019, we spent \$23.5 billion on capital expenditures and recognized total operating lease assets of \$4.4 billion. As of December 31, 2019, the amount of total future lease payments under operating leases, which had a weighted average remaining lease term of 10 years, was \$13.9 billion. Finance leases were not material for the year ended December 31, 2019. Please refer to Note 4 of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K for further information on the leases.

The following table presents our cash flows (in millions):

	Year Ended December 31,	
	2018	2019
Net cash provided by operating activities	\$ 47,971	\$ 54,520
Net cash used in investing activities	\$ (28,504)	\$ (29,491)
Net cash used in financing activities	\$ (13,179)	\$ (23,209)

Cash Provided by Operating Activities

Our largest source of cash provided by our operations are advertising revenues generated by Google properties and Google Network Members' properties. Additionally, we generate cash through sales of apps, in-app purchases, digital content products, and hardware; and licensing and service fees, including fees received for Google Cloud offerings and subscription-based products.

Our primary uses of cash from our operating activities include payments to our Google Network Members and distribution partners, and payments for content acquisition costs. In addition, uses of cash from operating activities include compensation and related costs, hardware inventory costs, other general corporate expenditures, and income taxes.

Net cash provided by operating activities increased from 2018 to 2019 primarily due to increases in cash received from revenues, offset by increases in cash paid for cost of revenues and operating expenses.

Cash Used in Investing Activities

Cash provided by investing activities consists primarily of maturities and sales of our investments in marketable and non-marketable securities. Cash used in investing activities consists primarily of purchases of property and

equipment, which primarily includes our investments in land and buildings for data centers and offices and information technology infrastructure to provide capacity for the growth of our businesses; purchases of marketable and non-marketable securities; and payments for acquisitions.

Net cash used in investing activities increased from 2018 to 2019 primarily due to a net increase in purchases of securities and an increase in payments for acquisitions, partially offset by a decrease in payments for purchases of property and equipment. The decrease in purchases of property and equipment was driven by decreases in purchases of servers as well as land and buildings for offices, partially offset by an increase in data center construction.

Cash Used in Financing Activities

Cash provided by financing activities consists primarily of proceeds from issuance of debt and proceeds from sale of interest in consolidated entities. Cash used in financing activities consists primarily of net payments related to stock-based award activities, repurchases of capital stock, and repayments of debt.

Net cash used in financing activities increased from 2018 to 2019 primarily due to an increase in cash payments for repurchases of capital stock and a decrease in proceeds from sale of interest in consolidated entities.

Contractual Obligations as of December 31, 2019

The following summarizes our contractual obligations as of December 31, 2019 (in millions):

	Payments Due By Period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Operating lease obligations ⁽¹⁾	\$ 13,854	\$ 1,757	\$ 3,525	\$ 2,809	\$ 5,763
Obligations for leases that have not yet commenced ⁽¹⁾	7,418	249	850	1,314	5,005
Purchase obligations ⁽²⁾	5,660	4,212	933	202	313
Long-term debt obligations ⁽³⁾	5,288	227	1,258	1,224	2,579
Tax payable ⁽⁴⁾	7,315	0	1,166	3,661	2,488
Other long-term liabilities reflected on our balance sheet ⁽⁵⁾	1,484	245	643	367	229
Total contractual obligations	\$ 41,019	\$ 6,690	\$ 8,375	\$ 9,577	\$ 16,377

⁽¹⁾ For further information, refer to Note 4 of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K.

⁽²⁾ Represents non-cancelable contractual obligations primarily related to information technology assets and data center operation costs; purchases of inventory; and digital media content licensing arrangements. The amounts included above represent the non-cancelable portion of agreements or the minimum cancellation fee. For those agreements with variable terms, we do not estimate the non-cancelable obligation beyond any minimum quantities and/or pricing as of December 31, 2019. Excluded from the table above are open orders for purchases that support normal operations.

⁽³⁾ Represents our principal and interest payments. For further information on long-term debt, refer to Note 6 of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K.

⁽⁴⁾ Represents one-time transition tax payable incurred as a result of the Tax Act. For further information, refer to Note 14 of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K. Excluded from the table above are long-term taxes payable of \$2.6 billion as of December 31, 2019 primarily related to uncertain tax positions, for which we are unable to make a reasonably reliable estimate of the timing of payments in individual years beyond 12 months due to uncertainties in the timing of tax audit outcomes.

⁽⁵⁾ Represents cash obligations recorded on our Consolidated Balance Sheets, including the short-term portion of these long-term liabilities, primarily for the construction of offices and certain commercial agreements. These amounts do not include the EC fines which are classified as current liabilities on our Consolidated Balance Sheets. For further information regarding the EC fines, refer to Note 10 of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K.

Off-Balance Sheet Arrangements

As of December 31, 2019, we did not have any off-balance sheet arrangements, as defined in Item 303(a)(4)(ii) of Regulation S-K, that have or are reasonably likely to have a current or future effect on our financial condition, changes in our financial condition, revenues, or expenses, results of operations, liquidity, capital expenditures, or capital resources that is material to investors.

Critical Accounting Policies and Estimates

We prepare our consolidated financial statements in accordance with GAAP. In doing so, we have to make estimates and assumptions that affect our reported amounts of assets, liabilities, revenues, expenses, gains and losses, as well as related disclosure of contingent assets and liabilities. In some cases, we could reasonably have used different accounting policies and estimates. In some cases, changes in the accounting estimates are reasonably likely to occur from period to period. Accordingly, actual results could differ materially from our estimates. To the extent that there are material differences between these estimates and actual results, our financial condition or results of operations will be affected. We base our estimates on past experience and other assumptions that we believe are reasonable under the circumstances, and we evaluate these estimates on an ongoing basis. We refer to accounting estimates of this type as critical accounting policies and estimates, which we discuss further below. We have reviewed our critical accounting policies and estimates with the audit committee of our board of directors.

Please see Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K for a summary of significant accounting policies and the effect on our financial statements.

Revenues

For the sale of third-party goods and services, we evaluate whether we are the principal, and report revenues on a gross basis, or an agent, and report revenues on a net basis. In this assessment, we consider if we obtain control of the specified goods or services before they are transferred to the customer, as well as other indicators such as the party primarily responsible for fulfillment, inventory risk, and discretion in establishing price.

Income Taxes

We are subject to income taxes in the U.S. and foreign jurisdictions. Significant judgment is required in evaluating our uncertain tax positions and determining our provision for income taxes.

Although we believe we have adequately reserved for our uncertain tax positions, no assurance can be given that the final tax outcome of these matters will not be different. We adjust these reserves in light of changing facts and circumstances, such as the closing of a tax audit or the refinement of an estimate. To the extent that the final tax outcome of these matters is different than the amounts recorded, such differences will affect the provision for income taxes and the effective tax rate in the period in which such determination is made.

The provision for income taxes includes the effect of reserve provisions and changes to reserves that are considered appropriate as well as the related net interest and penalties. In addition, we are subject to the continuous examination of our income tax returns by the Internal Revenue Services (IRS) and other tax authorities which may assert assessments against us. We regularly assess the likelihood of adverse outcomes resulting from these examinations and assessments to determine the adequacy of our provision for income taxes.

Loss Contingencies

We are regularly subject to claims, suits, government investigations, and other proceedings involving competition and antitrust, intellectual property, privacy, consumer protection, non-income taxes, labor and employment, commercial disputes, content generated by our users, goods and services offered by advertisers or publishers using our platforms, and other matters. Certain of these matters include speculative claims for substantial or indeterminate amounts of damages. We record a liability when we believe that it is probable that a loss has been incurred and the amount can be reasonably estimated. If we determine that a loss is reasonably possible and the loss or range of loss can be estimated, we disclose the possible loss in the Notes to the Consolidated Financial Statements.

We evaluate, on a regular basis, developments in our legal matters that could affect the amount of liability that has been previously accrued, and the matters and related reasonably possible losses disclosed, and make adjustments and changes to our disclosures as appropriate. Significant judgment is required to determine both the likelihood of there being, and the estimated amount of, a loss related to such matters. Until the final resolution of such matters, there may be an exposure to loss in excess of the amount recorded, and such amounts could be material. Should any of our estimates and assumptions change or prove to have been incorrect, it could have a material effect on our business, consolidated financial position, results of operations, or cash flows.

Long-lived Assets

Long-lived assets, including property and equipment, long-term prepayments, and intangible assets, excluding goodwill, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. The evaluation is performed at the lowest level of identifiable cash flows independent of other assets. An impairment loss would be recognized when estimated undiscounted future cash flows generated

from the assets are less than their carrying amount. Measurement of an impairment loss would be based on the excess of the carrying amount of the asset group over its fair value.

Fair Value Measurements

We measure certain of our non-marketable equity and debt investments, certain other instruments including stock-based compensation awards settled in the stock of certain Other Bets, and certain assets and liabilities acquired in a business combination, at fair value on a nonrecurring basis. The determination of fair value involves the use of appropriate valuation methods and relevant inputs into valuation models. The fair value hierarchy prioritizes the inputs used to measure fair value whereby it gives the highest priority to quoted prices (unadjusted) in active markets for identical assets or liabilities and the lowest priority to unobservable inputs. We maximize the use of relevant observable inputs and minimize the use of unobservable inputs. Our use of unobservable inputs reflects the assumptions that market participants would use and may include our own data adjusted based on reasonably available information. We apply judgment in assessing the relevance of observable market data to determine the priority of inputs under the fair value hierarchy, particularly in situations where there is very little or no market activity.

In determining the fair values of our non-marketable equity and debt investments, as well as assets acquired (especially with respect to intangible assets) and liabilities assumed in business combinations, we make significant estimates and assumptions, some of which include the use of unobservable inputs.

Certain stock-based compensation awards may be settled in the stock of certain of our Other Bets or in cash. These awards are based on the equity values of the respective Other Bet, which requires use of unobservable inputs.

We also have compensation arrangements with payouts based on realized investment returns, i.e. performance fees. We recognize compensation expense based on the estimated payouts, which may result in expense recognized before investment returns are realized, and may require the use of unobservable inputs.

Non-marketable Equity Securities

Our non-marketable equity securities not accounted for under the equity method are carried either at fair value or under the measurement alternative. Under the measurement alternative, the carrying value is measured at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same issuer. Determining whether an observed transaction is similar to a security within our portfolio requires judgment based on the rights and obligations of the securities. Recording upward and downward adjustments to the carrying value of our equity securities as a result of observable price changes requires quantitative assessments of the fair value of our securities using various valuation methodologies and involves the use of estimates.

Non-marketable equity securities are also subject to periodic impairment reviews. Our quarterly impairment analysis considers both qualitative and quantitative factors that may have a significant effect on the investment's fair value. Qualitative factors considered include industry and market conditions, financial performance, business prospects, and other relevant events and factors. When indicators of impairment exist, we prepare quantitative assessments of the fair value of our equity investments using both the market and income approaches which require judgment and the use of estimates, including discount rates, investee revenues and costs, and comparable market data of private and public companies, among others. When our assessment indicates that an impairment exists, we measure our non-marketable securities at fair value.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to financial market risks, including changes in foreign currency exchange rates, interest rates, and equity investment risks.

Foreign Currency Exchange Risk

We transact business globally in multiple currencies. Our international revenues, as well as costs and expenses denominated in foreign currencies, expose us to the risk of fluctuations in foreign currency exchange rates against the U.S. dollar. Principal currencies hedged included the Australian dollar, British pound, Canadian dollar, Euro and Japanese yen. For the purpose of analyzing foreign currency exchange risk, we considered the historical trends in foreign currency exchange rates and determined that it was reasonably possible that adverse changes in exchange rates of 10% could be experienced in the near term.

We use foreign exchange forward contracts to offset the foreign exchange risk on our assets and liabilities denominated in currencies other than the local currency of the subsidiary. These forward contracts reduce, but do not entirely eliminate, the effect of foreign currency exchange rate movements on our assets and liabilities. The foreign

currency gains and losses on the assets and liabilities are recorded in other income (expense), net, which are offset by the gains and losses on the forward contracts.

If an adverse 10% foreign currency exchange rate change was applied to total monetary assets and liabilities denominated in currencies other than the local currencies at the balance sheet dates, it would have resulted in an adverse effect on income before income taxes of approximately \$1 million and \$8 million as of December 31, 2018 and 2019, respectively. The adverse effect as of December 31, 2018 and 2019 is after consideration of the offsetting effect of approximately \$374 million and \$662 million, respectively, from foreign exchange contracts in place for the years ended December 31, 2018 and 2019.

We use foreign currency forwards and option contracts, including collars (an option strategy comprised of a combination of purchased and written options) to protect our forecasted U.S. dollar-equivalent earnings from changes in foreign currency exchange rates. When the U.S. dollar strengthens, gains from foreign currency options and forwards reduce the foreign currency losses related to our earnings. When the U.S. dollar weakens, losses from foreign currency collars and forwards offset the foreign currency gains related to our earnings. These hedging contracts reduce, but do not entirely eliminate, the effect of foreign currency exchange rate movements. We designate these contracts as cash flow hedges for accounting purposes. We reflect the gains or losses of foreign currency spot rate changes as a component of AOCI and subsequently reclassify them into revenues to offset the hedged exposures as they occur.

If the U.S. dollar weakened by 10% as of December 31, 2018 and 2019, the amount recorded in AOCI related to our foreign exchange contracts before tax effect would have been approximately \$772 million and \$1.1 billion lower as of December 31, 2018 and 2019, respectively. The change in the value recorded in AOCI would be expected to offset a corresponding foreign currency change in forecasted hedged revenues when recognized.

We use foreign exchange forward contracts designated as net investment hedges to hedge the foreign currency risks related to our investment in foreign subsidiaries. These forward contracts serve to offset the foreign currency translation risk from our foreign operations.

If the U.S. dollar weakened by 10%, the amount recorded in cumulative translation adjustment (CTA) within AOCI related to our net investment hedge would have been approximately \$635 million and \$936 million lower as of December 31, 2018 and 2019, respectively. The change in value recorded in CTA would be expected to offset a corresponding foreign currency translation gain or loss from our investment in foreign subsidiaries.

Interest Rate Risk

Our Corporate Treasury investment strategy is to achieve a return that will allow us to preserve capital and maintain liquidity. We invest primarily in debt securities including those of the U.S. government and its agencies, corporate debt securities, mortgage-backed securities, money market and other funds, municipal securities, time deposits, asset backed securities, and debt instruments issued by foreign governments. By policy, we limit the amount of credit exposure to any one issuer. Our investments in both fixed rate and floating rate interest earning securities carry a degree of interest rate risk. Fixed rate securities may have their fair market value adversely affected due to a rise in interest rates, while floating rate securities may produce less income than predicted if interest rates fall. Unrealized gains or losses on our marketable debt securities are primarily due to interest rate fluctuations as a result of higher market interest rates compared to interest rates at the time of purchase. We account for both fixed and variable rate securities at fair value with gains and losses recorded in AOCI until the securities are sold.

We use value-at-risk (VaR) analysis to determine the potential effect of fluctuations in interest rates on the value of our marketable debt security portfolio. The VaR is the expected loss in fair value, for a given confidence interval, for our investment portfolio due to adverse movements in interest rates. We use a variance/covariance VaR model with 95% confidence interval. The estimated one-day loss in fair value of our marketable debt securities as of December 31, 2018 and 2019 are shown below (in millions):

	As of December 31,		12-Month Average As of December 31,	
	2018	2019	2018	2019
Risk Category - Interest Rate	\$ 58	\$ 104	\$ 66	\$ 90

Actual future gains and losses associated with our marketable debt security portfolio may differ materially from the sensitivity analyses performed as of December 31, 2018 and 2019 due to the inherent limitations associated with predicting the timing and amount of changes in interest rates and our actual exposures and positions. VaR analysis is not intended to represent actual losses but is used as a risk estimation.

Equity Investment Risk

Our marketable and non-marketable equity securities are subject to a wide variety of market-related risks that could substantially reduce or increase the fair value of our holdings.

Our marketable equity securities are publicly traded stocks or funds and our non-marketable equity securities are investments in privately held companies, some of which are in the startup or development stages.

We record our marketable equity securities not accounted for under the equity method at fair value based on readily determinable market values, of which publicly traded stocks and mutual funds are subject to market price volatility, and represent \$3.3 billion of our investments as of December 31, 2019. A hypothetical adverse price change of 10%, which could be experienced in the near term, would decrease the fair value of our marketable equity securities by \$330 million.

Our non-marketable equity securities not accounted for under the equity method are adjusted to fair value for observable transactions for identical or similar investments of the same issuer or impairment (referred to as the measurement alternative). The fair value is measured at the time of the observable transaction, which is not necessarily an indication of the current fair value as of the balance sheet date. These investments, especially those that are in the early stages, are inherently risky because the technologies or products these companies have under development are typically in the early phases and may never materialize and they may experience a decline in financial condition, which could result in a loss of a substantial part of our investment in these companies. The success of our investment in any private company is also typically dependent on the likelihood of our ability to realize appreciation in the value of our investments through liquidity events such as public offerings, acquisitions, private sales or other favorable market events. As of December 31, 2019, the carrying value of our non-marketable equity securities, which were accounted for under the measurement alternative, was \$11.4 billion. Valuations of our equity investments in private companies are inherently more complex due to the lack of readily available market data. Volatility in the global economic climate and financial markets could result in a significant impairment charge on our non-marketable equity securities.

The carrying values of our equity method investments generally do not fluctuate based on market price changes, however these investments could be impaired if the carrying value exceeds the fair value.

For further information about our equity investments, please refer to Note 1 and Note 3 of the Notes to Consolidated Financial Statements included in Part II of this Annual Report on Form 10-K.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Alphabet Inc.

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The supplementary financial information required by this Item 8 is included in Item 7 under the caption "Quarterly Results of Operations."

REPORT OF ERNST & YOUNG LLP, INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Alphabet Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Alphabet Inc. (the Company) as of December 31, 2018 and 2019, the related consolidated statements of income, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and financial statement schedule listed in the Index at Item 15 (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2018 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 3, 2020 expressed an unqualified opinion thereon.

Adoption of New Accounting Standard

As discussed in Note 1 to the financial statements, the Company changed its method for accounting for the recognition, measurement, presentation and disclosure of certain equity securities in the year ended December 31, 2018.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the U.S. Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Loss Contingencies

<i>Description of the Matter</i>	<p>The Company is regularly subject to claims, suits, and government investigations involving competition, intellectual property, privacy, consumer protection, tax, labor and employment, commercial disputes, content generated by its users, goods and services offered by advertisers or publishers using their platforms, and other matters. As described in Note 10 to the financial statements “Commitments and Contingencies” such claims could result in adverse consequences.</p>
<i>How We Addressed the Matter in Our Audit</i>	<p>Significant judgment is required to determine both the likelihood, and the estimated amount, of a loss related to such matters. Auditing management’s accounting for and disclosure of loss contingencies from these matters involved challenging and subjective auditor judgement in assessing the Company’s evaluation of the probability of a loss, and the estimated amount or range of loss.</p> <p>We tested relevant controls over the identified risks associated with management’s accounting for and disclosure of these matters. This included controls over management’s assessment of the probability of incurrence of a loss and whether the loss or range of loss was reasonably estimable and the development of related disclosures.</p> <p>Our audit procedures included gaining an understanding of previous rulings issued by regulators and the status of ongoing lawsuits, reviewing letters addressing the matters from internal and external legal counsel, meeting with internal legal counsel to discuss the allegations, and obtaining a representation letter from management on these matters. We also evaluated the Company’s disclosures in relation to these matters.</p>

/s/ Ernst & Young LLP

We have served as the Company's auditor since 1999.

San Jose, California

February 3, 2020

REPORT OF ERNST & YOUNG LLP, INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Alphabet Inc.

Opinion on Internal Control over Financial Reporting

We have audited Alphabet Inc.'s internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Alphabet Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the 2019 consolidated financial statements of the Company and our report dated February 3, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the U.S. Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

San Jose, California
February 3, 2020

Alphabet Inc.
CONSOLIDATED BALANCE SHEETS

(In millions, except share amounts which are reflected in thousands, and par value per share amounts)

	As of December 31, 2018	As of December 31, 2019
Assets		
Current assets:		
Cash and cash equivalents	\$ 16,701	\$ 18,498
Marketable securities	92,439	101,177
Total cash, cash equivalents, and marketable securities	109,140	119,675
Accounts receivable, net of allowance of \$729 and \$753	20,838	25,326
Income taxes receivable, net	355	2,166
Inventory	1,107	999
Other current assets	4,236	4,412
Total current assets	135,676	152,578
Non-marketable investments	13,859	13,078
Deferred income taxes	737	721
Property and equipment, net	59,719	73,646
Operating lease assets	0	10,941
Intangible assets, net	2,220	1,979
Goodwill	17,888	20,624
Other non-current assets	2,693	2,342
Total assets	<u>\$ 232,792</u>	<u>\$ 275,909</u>
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	\$ 4,378	\$ 5,561
Accrued compensation and benefits	6,839	8,495
Accrued expenses and other current liabilities	16,958	23,067
Accrued revenue share	4,592	5,916
Deferred revenue	1,784	1,908
Income taxes payable, net	69	274
Total current liabilities	34,620	45,221
Long-term debt	4,012	4,554
Deferred revenue, non-current	396	358
Income taxes payable, non-current	11,327	9,885
Deferred income taxes	1,264	1,701
Operating lease liabilities	0	10,214
Other long-term liabilities	3,545	2,534
Total liabilities	55,164	74,467
Commitments and Contingencies (Note 10)		
Stockholders' equity:		
Convertible preferred stock, \$0.001 par value per share, 100,000 shares authorized; no shares issued and outstanding	0	0
Class A and Class B common stock, and Class C capital stock and additional paid-in capital, \$0.001 par value per share: 15,000,000 shares authorized (Class A 9,000,000, Class B 3,000,000, Class C 3,000,000); 695,556 (Class A 299,242, Class B 46,636, Class C 349,678) and 688,335 (Class A 299,828, Class B 46,441, Class C 342,066) shares issued and outstanding	45,049	50,552
Accumulated other comprehensive loss	(2,306)	(1,232)
Retained earnings	134,885	152,122
Total stockholders' equity	177,628	201,442
Total liabilities and stockholders' equity	<u>\$ 232,792</u>	<u>\$ 275,909</u>

See accompanying notes.

Alphabet Inc.
CONSOLIDATED STATEMENTS OF INCOME
(In millions, except per share amounts)

	Year Ended December 31,		
	2017	2018	2019
Revenues	\$ 110,855	\$ 136,819	\$ 161,857
Costs and expenses:			
Cost of revenues	45,583	59,549	71,896
Research and development	16,625	21,419	26,018
Sales and marketing	12,893	16,333	18,464
General and administrative	6,840	6,923	9,551
European Commission fines	2,736	5,071	1,697
Total costs and expenses	84,677	109,295	127,626
Income from operations	26,178	27,524	34,231
Other income (expense), net	1,015	7,389	5,394
Income before income taxes	27,193	34,913	39,625
Provision for income taxes	14,531	4,177	5,282
Net income	\$ 12,662	\$ 30,736	\$ 34,343
Basic net income per share of Class A and B common stock and Class C capital stock	\$ 18.27	\$ 44.22	\$ 49.59
Diluted net income per share of Class A and B common stock and Class C capital stock	\$ 18.00	\$ 43.70	\$ 49.16

See accompanying notes.

Alphabet Inc.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In millions)

	Year Ended December 31,		
	2017	2018	2019
Net income	\$ 12,662	\$ 30,736	\$ 34,343
Other comprehensive income (loss):			
Change in foreign currency translation adjustment	1,543	(781)	(119)
Available-for-sale investments:			
Change in net unrealized gains (losses)	307	88	1,611
Less: reclassification adjustment for net (gains) losses included in net income	105	(911)	(111)
Net change (net of tax effect of \$0, \$156, and \$221)	412	(823)	1,500
Cash flow hedges:			
Change in net unrealized gains (losses)	(638)	290	22
Less: reclassification adjustment for net (gains) losses included in net income	93	98	(299)
Net change (net of tax effect of \$247, \$103, and \$42)	(545)	388	(277)
Other comprehensive income (loss)	1,410	(1,216)	1,104
Comprehensive income	\$ 14,072	\$ 29,520	\$ 35,447

See accompanying notes.

Alphabet Inc.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In millions, except share amounts which are reflected in thousands)

	Class A and Class B Common Stock, Class C Capital Stock and Additional Paid-In Capital		Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Total Stockholders' Equity
	Shares	Amount			
Balance as of December 31, 2016	691,293	\$ 36,307	\$ (2,402)	\$ 105,131	\$ 139,036
Cumulative effect of accounting change	0	0	0	(15)	(15)
Common and capital stock issued	8,652	212	0	0	212
Stock-based compensation expense	0	7,694	0	0	7,694
Tax withholding related to vesting of restricted stock units	0	(4,373)	0	0	(4,373)
Repurchases of capital stock	(5,162)	(315)	0	(4,531)	(4,846)
Sale of interest in consolidated entities	0	722	0	0	722
Net income	0	0	0	12,662	12,662
Other comprehensive income (loss)	0	0	1,410	0	1,410
Balance as of December 31, 2017	694,783	40,247	(992)	113,247	152,502
Cumulative effect of accounting change	0	0	(98)	(599)	(697)
Common and capital stock issued	8,975	148	0	0	148
Stock-based compensation expense	0	9,353	0	0	9,353
Tax withholding related to vesting of restricted stock units and other	0	(4,782)	0	0	(4,782)
Repurchases of capital stock	(8,202)	(576)	0	(8,499)	(9,075)
Sale of interest in consolidated entities	0	659	0	0	659
Net income	0	0	0	30,736	30,736
Other comprehensive income (loss)	0	0	(1,216)	0	(1,216)
Balance as of December 31, 2018	695,556	45,049	(2,306)	134,885	177,628
Cumulative effect of accounting change	0	0	(30)	(4)	(34)
Common and capital stock issued	8,120	202	0	0	202
Stock-based compensation expense	0	10,890	0	0	10,890
Tax withholding related to vesting of restricted stock units and other	0	(4,455)	0	0	(4,455)
Repurchases of capital stock	(15,341)	(1,294)	0	(17,102)	(18,396)
Sale of interest in consolidated entities	0	160	0	0	160
Net income	0	0	0	34,343	34,343
Other comprehensive income (loss)	0	0	1,104	0	1,104
Balance as of December 31, 2019	688,335	\$ 50,552	\$ (1,232)	\$ 152,122	\$ 201,442

See accompanying notes.

Alphabet Inc.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In millions)

	Year Ended December 31,		
	2017	2018	2019
Operating activities			
Net income	\$ 12,662	\$ 30,736	\$ 34,343
Adjustments:			
Depreciation and impairment of property and equipment	6,103	8,164	10,856
Amortization and impairment of intangible assets	812	871	925
Stock-based compensation expense	7,679	9,353	10,794
Deferred income taxes	258	778	173
(Gain) loss on debt and equity securities, net	37	(6,650)	(2,798)
Other	294	(189)	(592)
Changes in assets and liabilities, net of effects of acquisitions:			
Accounts receivable	(3,768)	(2,169)	(4,340)
Income taxes, net	8,211	(2,251)	(3,128)
Other assets	(2,164)	(1,207)	(621)
Accounts payable	731	1,067	428
Accrued expenses and other liabilities	4,891	8,614	7,170
Accrued revenue share	955	483	1,273
Deferred revenue	390	371	37
Net cash provided by operating activities	37,091	47,971	54,520
Investing activities			
Purchases of property and equipment	(13,184)	(25,139)	(23,548)
Purchases of marketable securities	(92,195)	(50,158)	(100,315)
Maturities and sales of marketable securities	73,959	48,507	97,825
Purchases of non-marketable investments	(1,745)	(2,073)	(1,932)
Maturities and sales of non-marketable investments	533	1,752	405
Acquisitions, net of cash acquired, and purchases of intangible assets	(287)	(1,491)	(2,515)
Proceeds from collection of notes receivable	1,419	0	0
Other investing activities	99	98	589
Net cash used in investing activities	(31,401)	(28,504)	(29,491)
Financing activities			
Net payments related to stock-based award activities	(4,166)	(4,993)	(4,765)
Repurchases of capital stock	(4,846)	(9,075)	(18,396)
Proceeds from issuance of debt, net of costs	4,291	6,766	317
Repayments of debt	(4,377)	(6,827)	(585)
Proceeds from sale of interest in consolidated entities	800	950	220
Net cash used in financing activities	(8,298)	(13,179)	(23,209)
Effect of exchange rate changes on cash and cash equivalents	405	(302)	(23)
Net increase (decrease) in cash and cash equivalents	(2,203)	5,986	1,797
Cash and cash equivalents at beginning of period	12,918	10,715	16,701
Cash and cash equivalents at end of period	\$ 10,715	\$ 16,701	\$ 18,498
Supplemental disclosures of cash flow information			
Cash paid for taxes, net of refunds	\$ 6,191	\$ 5,671	\$ 8,203

See accompanying notes.

Alphabet Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1. Nature of Operations and Summary of Significant Accounting Policies**Nature of Operations**

Google was incorporated in California in September 1998 and re-incorporated in the State of Delaware in August 2003. In 2015, we implemented a holding company reorganization, and as a result, Alphabet Inc. (Alphabet) became the successor issuer to Google.

We generate revenues primarily by delivering relevant, cost-effective online advertising.

Basis of Consolidation

The consolidated financial statements of Alphabet include the accounts of Alphabet and entities consolidated under the variable interest and voting models. Noncontrolling interests are not presented separately as the amounts are not material. All intercompany balances and transactions have been eliminated.

Use of Estimates

Preparation of consolidated financial statements in conformity with generally accepted accounting principles in the United States (GAAP) requires us to make estimates and assumptions that affect the amounts reported and disclosed in the financial statements and the accompanying notes. Actual results could differ materially from these estimates. On an ongoing basis, we evaluate our estimates, including those related to the bad debt allowance, sales allowances, fair values of financial instruments, intangible assets and goodwill, useful lives of intangible assets and property and equipment, income taxes, and contingent liabilities, among others. We base our estimates on assumptions, both historical and forward looking, that are believed to be reasonable, the results of which form the basis for making judgments about the carrying values of assets and liabilities.

Revenue Recognition

We recognize revenues when we transfer control of promised goods or services to our customers in an amount that reflects the consideration to which we expect to be entitled to in exchange for those goods or services.

See Note 2 for further discussion on Revenues.

Cost of Revenues

Cost of revenues consists of TAC and other costs of revenues.

TAC represents the amounts paid to Google Network Members primarily for ads displayed on their properties and amounts paid to our distribution partners who make available our search access points and services. Our distribution partners include browser providers, mobile carriers, original equipment manufacturers, and software developers.

Other cost of revenues (which is the cost of revenues excluding TAC) includes the following:

- Content acquisition costs primarily related to payments to content providers from whom we license video and other content for distribution on YouTube and Google Play (we pay fees to these content providers based on revenues generated or a flat fee);
- Expenses associated with our data centers and other operations (including bandwidth, compensation expense (including SBC), depreciation, energy, and other equipment costs); and
- Inventory related costs for hardware we sell.

Stock-based Compensation

Stock-based compensation primarily consists of Alphabet restricted stock units (RSUs). RSUs are equity classified and measured at the fair market value of the underlying stock at the grant date. We recognize RSU expense using the straight-line attribution method over the requisite service period and account for forfeitures as they occur.

For RSUs, shares are issued on the vesting dates net of the applicable statutory tax withholding to be paid by us on behalf of our employees. As a result, fewer shares are issued than the number of RSUs outstanding and the tax withholding is recorded as a reduction to additional paid-in capital.

Additionally, stock-based compensation includes stock-based awards, such as performance stock units (PSUs) and awards that may be settled in cash or the stock of certain of our Other Bets. PSUs are equity classified and expense is recognized over the requisite service period. Awards that are liability classified are remeasured at fair value through

settlement or maturity (six months and one day after vesting). The fair value of such awards is based on the equity valuation of the respective Other Bet.

Performance Fees

We have compensation arrangements with payouts based on realized investment returns. We recognize compensation expense based on the estimated payouts, which may result in expense recognized before investment returns are realized. Performance fees, which are primarily related to gains on equity securities, are recorded as a component of other income (expense), net.

Certain Risks and Concentrations

Our revenues are primarily derived from online advertising, the market for which is highly competitive and rapidly changing. In addition, our revenues are generated from a multitude of markets in countries around the world. Significant changes in this industry or changes in customer buying or advertiser spending behavior could adversely affect our operating results.

No individual customer or groups of affiliated customers represented more than 10% of our revenues in 2017, 2018, or 2019. In 2017, 2018, and 2019, we generated approximately 47%, 46%, and 46% of our revenues, respectively, from customers based in the U.S.

We are subject to concentrations of credit risk principally from cash and cash equivalents, marketable securities, foreign exchange contracts, and accounts receivable. We manage our credit risk exposure through timely assessment of our counterparty creditworthiness, credit limits and use of collateral management.

Cash equivalents and marketable securities consist primarily of time deposits, money market and other funds, highly liquid debt instruments of the U.S. government and its agencies, debt instruments issued by foreign governments, debt instruments issued by municipalities in the U.S., corporate debt securities, mortgage-backed securities, and asset-backed securities. Foreign exchange contracts are transacted with various financial institutions with high credit standing. Accounts receivable are typically unsecured and are derived from revenues earned from customers located around the world. We perform ongoing evaluations to determine customer credit and we limit the amount of credit we extend. We generally do not require collateral from our customers. We maintain reserves for estimated credit losses and these losses have generally been within our expectations.

Fair Value of Financial Instruments

Our financial assets and liabilities that are measured at fair value on a recurring basis include cash equivalents, marketable securities, derivative contracts, and non-marketable debt securities. Our financial assets measured at fair value on a nonrecurring basis include non-marketable equity securities, which are adjusted to fair value when observable price changes are identified or when the non-marketable equity securities are impaired (referred to as the measurement alternative). Other financial assets and liabilities are carried at cost with fair value disclosed, if required.

Fair value is an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that is determined based on assumptions that market participants would use in pricing an asset or a liability. Assets and liabilities recorded at fair value are measured and classified in accordance with a three-tier fair value hierarchy based on the observability of the inputs available in the market used to measure fair value:

Level 1 - Observable inputs that reflect quoted prices (unadjusted) for identical assets or liabilities in active markets.

Level 2 - Inputs that are based upon quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant inputs are observable in the market or can be derived from observable market data. Where applicable, these models project future cash flows and discount the future amounts to a present value using market-based observable inputs including interest rate curves, foreign exchange rates, and credit ratings.

Level 3 - Unobservable inputs that are supported by little or no market activities.

The fair value hierarchy requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value.

Cash, Cash Equivalents, and Marketable Securities

We invest all excess cash primarily in government bonds, corporate debt securities, mortgage-backed and asset-backed securities, time deposits, and money market funds.

We classify all marketable investments that have stated maturities of three months or less from the date of purchase as cash equivalents and those with stated maturities of greater than three months as marketable securities.

We determine the appropriate classification of our investments in marketable securities at the time of purchase and reevaluate such designation at each balance sheet date. We have classified and accounted for our marketable debt securities as available-for-sale. After consideration of our risk versus reward objectives, as well as our liquidity requirements, we may sell these debt securities prior to their stated maturities. As we view these securities as available to support current operations, we classify highly liquid securities with maturities beyond 12 months as current assets under the caption marketable securities on the Consolidated Balance Sheets. We carry these securities at fair value, and report the unrealized gains and losses, net of taxes, as a component of stockholders' equity, except for unrealized losses determined to be other-than-temporary, which we record within other income (expense), net. We determine any realized gains or losses on the sale of marketable debt securities on a specific identification method, and we record such gains and losses as a component of other income (expense), net.

Non-Marketable Investments

We account for non-marketable equity investments through which we exercise significant influence but do not have control over the investee under the equity method. Our non-marketable equity securities not accounted for under the equity method are primarily accounted for under the measurement alternative in accordance with Accounting Standards Update No. 2016-01, which we adopted on January 1, 2018. Under the measurement alternative, the carrying value of our non-marketable equity investments is adjusted to fair value for observable transactions for identical or similar investments of the same issuer or impairment. Adjustments are determined primarily based on a market approach as of the transaction date.

We account for our non-marketable investments that meet the definition of a debt security as available-for-sale securities.

We classify our non-marketable investments that do not have stated contractual maturity dates, as non-current assets on the Consolidated Balance Sheets.

Impairment of Investments

We periodically review our debt and equity investments for impairment. For debt securities we consider the duration, severity and the reason for the decline in security value; whether it is more likely than not that we will be required to sell the security before recovery of its amortized cost basis; or if the amortized cost basis cannot be recovered as a result of credit losses. If any impairment is considered other-than-temporary, we will write down the security to its fair value and record the corresponding charge as other income (expense), net. For equity securities we consider impairment indicators such as negative changes in industry and market conditions, financial performance, business prospects, and other relevant events and factors. If indicators exist and the fair value of the security is below the carrying amount, we write down the security to fair value.

Variable Interest Entities

We determine at the inception of each arrangement whether an entity in which we have made an investment or in which we have other variable interests in is considered a variable interest entity (VIE). We consolidate VIEs when we are the primary beneficiary. The primary beneficiary of a VIE is the party that meets both of the following criteria: (1) has the power to make decisions that most significantly affect the economic performance of the VIE; and (2) has the obligation to absorb losses or the right to receive benefits that in either case could potentially be significant to the VIE. Periodically, we assess whether any changes in our interest or relationship with the entity affect our determination of whether the entity is still a VIE and, if so, whether we are the primary beneficiary. If we are not the primary beneficiary in a VIE, we account for the investment or other variable interests in a VIE in accordance with applicable GAAP.

Accounts Receivable

We record accounts receivable at the invoiced amount. We maintain an allowance for doubtful accounts to reserve for potentially uncollectible receivables. We review the accounts receivable by amounts due from customers that are past due to identify specific customers with known disputes or collectability issues. In determining the amount of the reserve, we make judgments about the creditworthiness of significant customers based on ongoing credit evaluations.

Our payment terms vary by the type and location of our customer and the products or services offered. The term between invoicing and when payment is due is not significant. For certain products or services and customer types, we require payment before the products or services are delivered to the customer.

Leases

We determine if an arrangement is a lease at inception. Our lease agreements generally contain lease and non-lease components. Payments under our lease arrangements are primarily fixed. Non-lease components primarily include payments for maintenance and utilities. We combine fixed payments for non-lease components with lease payments and account for them together as a single lease component which increases the amount of our lease assets and liabilities.

Certain lease agreements contain variable payments, which are expensed as incurred and not included in the lease assets and liabilities. These amounts include payments affected by the Consumer Price Index, payments contingent on wind or solar production for power purchase arrangements, and payments for maintenance and utilities.

Lease assets and liabilities are recognized at the present value of the future lease payments at the lease commencement date. The interest rate used to determine the present value of the future lease payments is our incremental borrowing rate, because the interest rate implicit in our leases is not readily determinable. Our incremental borrowing rate is estimated to approximate the interest rate on a collateralized basis with similar terms and payments, and in economic environments where the leased asset is located. Our lease terms include periods under options to extend or terminate the lease when it is reasonably certain that we will exercise that option. We generally use the base, non-cancelable, lease term when determining the lease assets and liabilities. Lease assets also include any prepaid lease payments and lease incentives.

Operating lease assets and liabilities are included on our Consolidated Balance Sheet beginning January 1, 2019. The current portion of our operating lease liabilities is included in accrued expenses and other current liabilities and the long term portion is included in operating lease liabilities. Finance lease assets are included in property and equipment, net. Finance lease liabilities are included in accrued expenses and other current liabilities or long-term debt.

Operating lease expense is recognized on a straight-line basis over the lease term.

Property and Equipment

Property and equipment includes the following categories: land and buildings, information technology assets, construction in progress, leasehold improvements, and furniture and fixtures. Land and buildings include land, offices, data centers and related building improvements. Information technology assets include servers and network equipment. We account for property and equipment at cost less accumulated depreciation. We compute depreciation using the straight-line method over the estimated useful lives of the assets. We depreciate buildings over periods of seven to 25 years. We depreciate information technology assets generally over periods of three to five years (specifically, three years for servers and three to five years for network equipment).

We depreciate leasehold improvements over the shorter of the remaining lease term or the estimated useful lives of the assets. Construction in progress is the construction or development of property and equipment that have not yet been placed in service for our intended use. Depreciation for equipment, buildings, and leasehold improvements commences once they are ready for our intended use. Land is not depreciated.

Inventory

Inventory consists primarily of finished goods and is stated at the lower of cost and net realizable value. Cost is computed using the first-in, first-out method.

Software Development Costs

We expense software development costs, including costs to develop software products or the software component of products to be sold, leased, or marketed to external users, before technological feasibility is reached. Technological feasibility is typically reached shortly before the release of such products and as a result, development costs that meet the criteria for capitalization were not material for the periods presented.

Software development costs also include costs to develop software to be used solely to meet internal needs and cloud based applications used to deliver our services. We capitalize development costs related to these software applications once the preliminary project stage is complete and it is probable that the project will be completed and the software will be used to perform the function intended. Costs capitalized for developing such software applications were not material for the periods presented.

Business Combinations

We include the results of operations of the businesses that we acquire as of the acquisition date. We allocate the purchase price of the acquisitions to the assets acquired and liabilities assumed based on their estimated fair

values. The excess of the purchase price over the fair values of identifiable assets and liabilities is recorded as goodwill. Acquisition-related expenses are recognized separately from the business combination and are expensed as incurred.

Long-Lived Assets, Goodwill and Other Acquired Intangible Assets

We review property and equipment, long-term prepayments and intangible assets, excluding goodwill, for impairment when events or changes in circumstances indicate the carrying amount may not be recoverable. We measure recoverability of these assets by comparing the carrying amounts to the future undiscounted cash flows that the assets or the asset group are expected to generate. If the carrying value of the assets are not recoverable, the impairment recognized is measured as the amount by which the carrying value of the asset exceeds its fair value. Impairments were not material for the periods presented.

We allocate goodwill to reporting units based on the expected benefit from the business combination. We evaluate our reporting units when changes in our operating structure occur, and if necessary, reassign goodwill using a relative fair value allocation approach. We test our goodwill for impairment at least annually, or more frequently if events or changes in circumstances indicate that the asset may be impaired. Goodwill impairments were not material for the periods presented.

Intangible assets with definite lives are amortized over their estimated useful lives. We amortize intangible assets on a straight-line basis with definite lives generally over periods ranging from one to twelve years.

Income Taxes

We account for income taxes using the asset and liability method, under which we recognize the amount of taxes payable or refundable for the current year and deferred tax assets and liabilities for the future tax consequences of events that have been recognized in our financial statements or tax returns. We measure current and deferred tax assets and liabilities based on provisions of enacted tax law. We evaluate the realization of our deferred tax assets based on all available evidence and establish a valuation allowance to reduce deferred tax assets when it is more likely than not that they will not be realized.

We recognize the financial statement effects of a tax position when it is more likely than not that, based on technical merits, the position will be sustained upon examination. The tax benefits of the position recognized in the financial statements are then measured based on the largest amount of benefit that is greater than 50% likely to be realized upon settlement with a taxing authority. In addition, we recognize interest and penalties related to unrecognized tax benefits as a component of the income tax provision.

Foreign Currency

Generally, the functional currency of our international subsidiaries is the local currency. We translate the financial statements of these subsidiaries to U.S. dollars using month-end exchange rates for assets and liabilities, and average rates for the annual period derived from month-end exchange rates for revenues, costs, and expenses. We record translation gains and losses in accumulated other comprehensive income (AOCI) as a component of stockholders' equity. We reflect net foreign exchange transaction gains and losses resulting from the conversion of the transaction currency to functional currency as a component of foreign currency exchange gain (loss) in other income (expense), net.

Advertising and Promotional Expenses

We expense advertising and promotional costs in the period in which they are incurred. For the years ended December 31, 2017, 2018 and 2019, advertising and promotional expenses totaled approximately \$5.1 billion, \$6.4 billion, and \$6.8 billion, respectively.

Recent Accounting Pronouncements

Recently issued accounting pronouncements not yet adopted

In June 2016, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update No. 2016-13 (ASU 2016-13) "Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments", which requires the measurement and recognition of expected credit losses for financial assets held at amortized cost. ASU 2016-13 replaces the existing incurred loss impairment model with an expected loss model which requires the use of forward-looking information to calculate credit loss estimates. It also eliminates the concept of other-than-temporary impairment and requires credit losses related to available-for-sale debt securities to be recorded through an allowance for credit losses rather than as a reduction in the amortized cost basis of the securities. These changes will result in earlier recognition of credit losses. We will adopt ASU 2016-13 effective January 1, 2020 with the cumulative effect of adoption recorded as an adjustment to retained earnings. The effect on our consolidated financial statements and related disclosures is not expected to be material.

Recently adopted accounting pronouncements

In February 2016, the FASB issued Accounting Standards Update No. 2016-02 (Topic 842) "Leases." Topic 842 supersedes the lease requirements in Accounting Standards Codification Topic 840, "Leases." Under Topic 842, lessees are required to recognize assets and liabilities on the balance sheet for most leases and provide enhanced disclosures. Leases continue to be classified as either finance or operating. We adopted Topic 842 effective January 1, 2019. The most significant effects of Topic 842 were the recognition of \$8.0 billion of operating lease assets and \$8.4 billion of operating lease liabilities and the de-recognition of \$1.5 billion of build-to-suit assets and liabilities upon adoption. We applied Topic 842 to all leases as of January 1, 2019 with comparative periods continuing to be reported under Topic 840. In the adoption of Topic 842, we carried forward the assessment from Topic 840 of whether our contracts contain or are leases, the classification of our leases, and remaining lease terms. Our accounting for finance leases remains substantially unchanged. The standard did not have a significant effect on our consolidated results of operations or cash flows. See Note 4 for further details.

Prior Period Reclassifications

Certain amounts in prior periods have been reclassified to conform with current period presentation. Hedging gains (losses), which were previously included in Google revenues, are now reported separately as a component of total revenues for all periods presented. See Note 2 for further details.

Additionally, performance fees have been reclassified for all periods from general and administrative expenses to other income (expense), net to align with the presentation of the investment gains and losses on which the performance fees are based. See Note 7 for further details.

Note 2. Revenues

Revenue Recognition

Revenues are recognized when control of the promised goods or services is transferred to our customers, in an amount that we expect in exchange for those goods or services. Sales and other similar taxes are excluded from revenues.

The following table presents our revenues disaggregated by type (in millions). Certain amounts in prior periods have been reclassified to conform with current period presentation.

	Year Ended December 31,		
	2017	2018	2019
Google Search & other	\$ 69,811	\$ 85,296	\$ 98,115
YouTube ads ⁽¹⁾	8,150	11,155	15,149
Google properties	77,961	96,451	113,264
Google Network Members' properties	17,616	20,010	21,547
Google advertising	95,577	116,461	134,811
Google Cloud	4,056	5,838	8,918
Google other ⁽¹⁾	10,914	14,063	17,014
Google revenues	110,547	136,362	160,743
Other Bets revenues	477	595	659
Hedging gains (losses)	(169)	(138)	455
Total revenues	\$ 110,855	\$ 136,819	\$ 161,857

⁽¹⁾ YouTube non-advertising revenues are included in Google other revenues.

The following table presents our revenues disaggregated by geography, based on the addresses of our customers (in millions):

	Year Ended December 31,					
	2017		2018		2019	
United States	\$ 52,449	47%	\$ 63,269	46%	\$ 74,843	46%
EMEA ⁽¹⁾	36,236	33	44,739	33	50,645	31
APAC ⁽¹⁾	16,192	15	21,341	15	26,928	17
Other Americas ⁽¹⁾	6,147	5	7,608	6	8,986	6
Hedging gains (losses)	(169)	0	(138)	0	455	0
Total revenues	\$ 110,855	100%	\$ 136,819	100%	\$ 161,857	100%

⁽¹⁾ Regions represent Europe, the Middle East, and Africa (EMEA); Asia-Pacific (APAC); and Canada and Latin America (Other Americas).

Advertising Revenues

We generate advertising revenues primarily by delivering advertising on Google properties, including Google.com, the Google Search app, YouTube, Google Play, Gmail and Google Maps; and Google Network Members' properties.

Our customers generally purchase advertising inventory through Google Ads, Google Ad Manager as part of the Authorized Buyers marketplace, and Google Marketing Platform, among others.

We offer advertising on a click, impression or view basis. We recognize revenue each time a user clicks on the ad, when the ad is displayed or a user views the ad.

For ads placed on Google Network Members' properties, we evaluate whether we are the principal (i.e., report revenues on a gross basis) or agent (i.e., report revenues on a net basis). Generally, we report advertising revenues for ads placed on Google Network Members' properties on a gross basis, that is, the amounts billed to our customers are recorded as revenues, and amounts paid to Google Network Members are recorded as cost of revenues. Where we are the principal, we control the advertising inventory before it is transferred to our customers. Our control is evidenced by our sole ability to monetize the advertising inventory before it is transferred to our customers, and is further supported by us being primarily responsible to our customers and having a level of discretion in establishing pricing.

Google Cloud Revenues

Google Cloud revenues consist primarily of revenues from Google Cloud Platform (which includes infrastructure and data and analytics platform products, and other services), G Suite productivity tools and other enterprise cloud services. Our cloud revenues are provided on either a consumption or subscription basis. Revenue related to cloud services provided on a consumption basis is recognized when the customer utilizes the services, based on the quantity of services consumed. Revenue related to cloud services provided on a subscription basis is recognized ratably over the contract term as the customer receives and consumes the benefits of the cloud services.

Other Revenues

Google other revenues and Other Bets revenues consist primarily of revenues from:

- Google Play, which includes revenues from sale of apps and in-app purchases (which we recognize net of payout to developers) and digital content sold in the Google Play store;
- hardware, including Google Nest home products, Pixelbooks, Pixel phones and other devices;
- YouTube non-advertising including, YouTube premium and YouTube TV subscriptions and other services; and
- other products and services.

As it relates to Google other revenues, the most significant judgment is determining whether we are the principal or agent for app sales and in-app purchases through the Google Play store. We report revenues from these transactions on a net basis because our performance obligation is to facilitate a transaction between app developers and end users, for which we earn a commission. Consequently, the portion of the gross amount billed to end users that is remitted to app developers is not reflected as revenues.

Arrangements with Multiple Performance Obligations

Our contracts with customers may include multiple performance obligations. For such arrangements, we allocate revenues to each performance obligation based on its relative standalone selling price. We generally determine standalone selling prices based on the prices charged to customers or using expected cost plus margin.

Customer Incentives and Credits

Certain customers receive cash-based incentives or credits, which are accounted for as variable consideration. We estimate these amounts based on the expected amount to be provided to customers and reduce revenues. We believe that there will not be significant changes to our estimates of variable consideration.

Deferred Revenues

We record deferred revenues when cash payments are received or due in advance of our performance, including amounts which are refundable. The increase in the deferred revenue balance for the year ended December 31, 2019 was primarily driven by cash payments received or due in advance of satisfying our performance obligations, offset by \$1.7 billion of revenues recognized that were included in the deferred revenue balance as of December 31, 2018.

Additionally, we have performance obligations associated with commitments in customer contracts, primarily related to Google Cloud, for future services that have not yet been recognized in revenue. This includes related deferred revenue currently recorded and amounts that will be invoiced in future periods. As of December 31, 2019, the amount not yet recognized in revenue from these commitments is \$11.4 billion, which reflects our assessment of relevant contract terms. This amount excludes contracts (i) with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed. We expect to recognize approximately two thirds over the next 24 months with the remaining thereafter. However, the amount and timing of revenue recognition is largely driven by customer utilization, which could impact our estimate of the remaining amount of commitments and when we expect to recognize such revenues.

Sales Commissions

We generally expense sales commissions when incurred because the amortization period would have been one year or less. These costs are recorded within sales and marketing expenses.

Note 3. Financial Instruments

Debt Securities

We classify our marketable debt securities within Level 2 in the fair value hierarchy because we use quoted market prices to the extent available or alternative pricing sources and models utilizing market observable inputs to determine fair value.

The following tables summarize our debt securities by significant investment categories as of December 31, 2018 and 2019 (in millions):

	As of December 31, 2018					
	Adjusted Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	Cash and Cash Equivalents	Marketable Securities
Level 2:						
Time deposits ⁽¹⁾	\$ 2,202	\$ 0	\$ 0	\$ 2,202	\$ 2,202	\$ 0
Government bonds	53,634	71	(414)	53,291	3,717	49,574
Corporate debt securities	25,383	15	(316)	25,082	44	25,038
Mortgage-backed and asset-backed securities	16,918	11	(324)	16,605	0	16,605
Total	<u>\$ 98,137</u>	<u>\$ 97</u>	<u>\$ (1,054)</u>	<u>\$ 97,180</u>	<u>\$ 5,963</u>	<u>\$ 91,217</u>

	As of December 31, 2019					
	Adjusted Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	Cash and Cash Equivalents	Marketable Securities
Level 2:						
Time deposits ⁽¹⁾	\$ 2,294	\$ 0	\$ 0	\$ 2,294	\$ 2,294	\$ 0
Government bonds	55,033	434	(30)	55,437	4,518	50,919
Corporate debt securities	27,164	337	(3)	27,498	44	27,454
Mortgage-backed and asset-backed securities	19,453	96	(41)	19,508	0	19,508
Total	<u>\$103,944</u>	<u>\$ 867</u>	<u>\$ (74)</u>	<u>\$104,737</u>	<u>\$ 6,856</u>	<u>\$ 97,881</u>

⁽¹⁾ The majority of our time deposits are domestic deposits.

We determine realized gains or losses on the sale or extinguishment of debt securities on a specific identification method. We recognized gross realized gains of \$185 million, \$1.3 billion, and \$292 million for the years ended December 31, 2017, 2018, and 2019, respectively. We recognized gross realized losses of \$295 million, \$143 million, and \$143 million for the years ended December 31, 2017, 2018, and 2019, respectively. We reflect these gains and losses as a component of other income (expense), net, in the Consolidated Statements of Income.

The following table summarizes the estimated fair value of our investments in marketable debt securities with stated contractual maturity dates, accounted for as available-for-sale securities and classified by the contractual maturity date of the securities (in millions):

	As of December 31, 2019
Due in 1 year	\$ 20,392
Due in 1 year through 5 years	63,151
Due in 5 years through 10 years	2,671
Due after 10 years	11,667
Total	<u>\$ 97,881</u>

The following tables present gross unrealized losses and fair values for those investments that were in an unrealized loss position as of December 31, 2018 and 2019, aggregated by investment category and the length of time that individual securities have been in a continuous loss position (in millions):

	As of December 31, 2018					
	Less than 12 Months		12 Months or Greater		Total	
	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
Government bonds	\$ 12,019	\$ (85)	\$ 23,877	\$ (329)	\$ 35,896	\$ (414)
Corporate debt securities	10,171	(107)	11,545	(209)	21,716	(316)
Mortgage-backed and asset-backed securities	5,534	(75)	8,519	(249)	14,053	(324)
Total	<u>\$ 27,724</u>	<u>\$ (267)</u>	<u>\$ 43,941</u>	<u>\$ (787)</u>	<u>\$ 71,665</u>	<u>\$ (1,054)</u>

	As of December 31, 2019					
	Less than 12 Months		12 Months or Greater		Total	
	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
Government bonds	\$ 6,752	\$ (20)	\$ 4,590	\$ (10)	\$ 11,342	\$ (30)
Corporate debt securities	1,665	(2)	978	(1)	2,643	(3)
Mortgage-backed and asset-backed securities	4,536	(13)	2,835	(28)	7,371	(41)
Total	<u>\$ 12,953</u>	<u>\$ (35)</u>	<u>\$ 8,403</u>	<u>\$ (39)</u>	<u>\$ 21,356</u>	<u>\$ (74)</u>

During the years ended December 31, 2017, 2018 and 2019, we did not recognize any significant other-than-temporary impairment losses.

Equity Investments

The following discusses our marketable equity securities, non-marketable equity securities, gains and losses on marketable and non-marketable equity securities, as well as our equity securities accounted for under the equity method.

Our marketable equity securities are publicly traded stocks or funds measured at fair value and classified within Level 1 and 2 in the fair value hierarchy because we use quoted prices for identical assets in active markets or inputs that are based upon quoted prices for similar instruments in active markets. All gains and losses on marketable equity securities, realized and unrealized, are recognized in other income (expense), net.

Our non-marketable equity securities are investments in privately held companies without readily determinable market values. The carrying value of our non-marketable equity securities is adjusted to fair value for observable transactions for identical or similar investments of the same issuer or impairment (referred to as the measurement alternative). All gains and losses on non-marketable equity securities, realized and unrealized, are recognized in other income (expense), net. Non-marketable equity securities that have been remeasured during the period are classified within Level 2 or Level 3 in the fair value hierarchy because we estimate the value based on valuation methods using the observable transaction price at the transaction date and other unobservable inputs including volatility, rights, and obligations of the securities we hold.

Gains and losses on marketable and non-marketable equity securities

Gains and losses reflected in other income (expense), net, for our marketable and non-marketable equity securities are summarized below (in millions):

	Year Ended December 31,	
	2018	2019
Net gain (loss) on equity securities sold during the period	\$ 1,458	\$ (301)
Net unrealized gain (loss) on equity securities held as of the end of the period ⁽¹⁾	4,002	2,950
Total gain (loss) recognized in other income (expense), net	\$ 5,460	\$ 2,649

⁽¹⁾ Includes net gains of \$4.1 billion and \$1.8 billion related to non-marketable equity securities for the years ended December 31, 2018 and 2019, respectively.

In the table above, net gain (loss) on equity securities sold during the period reflects the difference between the sale proceeds and the carrying value of the equity securities at the beginning of the period or the purchase date, if later.

Cumulative net gains on equity securities sold during the period, which is summarized in the following table (in millions), represents the total net gains (losses) recognized after the initial purchase date of the equity security. While these net gains may have been reflected in periods prior to the period of sale, we believe they are important supplemental information as they reflect the economic realized gain on the securities sold during the period. Cumulative net gains is calculated as the difference between the sale price and the initial purchase price for the equity security sold during the period.

	Equity Securities Sold During the Year Ended December 31,	
	2018	2019
Total sale price	\$ 1,965	\$ 3,134
Total initial cost	515	858
Cumulative net gains	\$ 1,450	\$ 2,276

Carrying value of marketable and non-marketable equity securities

The carrying value is measured as the total initial cost plus the cumulative net gain (loss). The carrying values for our marketable and non-marketable equity securities are summarized below (in millions):

	As of December 31, 2018		
	Marketable Securities	Non-Marketable Securities	Total
Total initial cost	\$ 1,168	\$ 8,168	\$ 9,336
Cumulative net gain ⁽¹⁾	54	4,107	4,161
Carrying value	<u>\$ 1,222</u>	<u>\$ 12,275</u>	<u>\$ 13,497</u>

⁽¹⁾ Non-marketable securities cumulative net gain is comprised of \$4.3 billion unrealized gains and \$178 million unrealized losses (including impairment).

	As of December 31, 2019		
	Marketable Securities	Non-Marketable Securities	Total
Total initial cost	\$ 1,935	\$ 8,297	\$ 10,232
Cumulative net gain ⁽¹⁾	1,361	3,056	4,417
Carrying value	<u>\$ 3,296</u>	<u>\$ 11,353</u>	<u>\$ 14,649</u>

⁽¹⁾ Non-marketable securities cumulative net gain is comprised of \$3.5 billion unrealized gains and \$445 million unrealized losses (including impairment).

Marketable equity securities

The following table summarizes marketable equity securities measured at fair value by significant investment categories as of December 31, 2018 and 2019 (in millions):

	As of December 31, 2018		As of December 31, 2019	
	Cash and Cash Equivalents	Marketable Securities	Cash and Cash Equivalents	Marketable Securities
Level 1:				
Money market funds	\$ 3,493	\$ 0	\$ 4,604	\$ 0
Marketable equity securities ⁽¹⁾	0	994	0	3,046
	<u>3,493</u>	<u>994</u>	<u>4,604</u>	<u>3,046</u>
Level 2:				
Mutual funds	0	228	0	250
Total	<u>\$ 3,493</u>	<u>\$ 1,222</u>	<u>\$ 4,604</u>	<u>\$ 3,296</u>

⁽¹⁾ The balance as of December 31, 2019 includes investments that were reclassified from non-marketable equity securities following the initial public offering of the issuers.

Non-marketable equity securities

The following is a summary of unrealized gains and losses recorded in other income (expense), net, and included as adjustments to the carrying value of non-marketable equity securities (in millions):

	Year Ended December 31,	
	2018	2019
Unrealized gains	\$ 4,285	\$ 2,163
Unrealized losses (including impairment)	(178)	(372)
Total unrealized gain (loss) for non-marketable equity securities	<u>\$ 4,107</u>	<u>\$ 1,791</u>

During the year ended December 31, 2019, included in the \$11.4 billion of non-marketable equity securities, \$7.6 billion were measured at fair value primarily based on observable market transactions, resulting in a net unrealized gain of \$1.8 billion.

Equity securities accounted for under the Equity Method

Equity securities accounted for under the equity method had a carrying value of approximately \$1.3 billion as of December 31, 2018 and 2019. Our share of gains and losses including impairment are included as a component of other income (expense), net, in the Consolidated Statements of Income. See Note 7 for further details on other income (expense), net.

Derivative Financial Instruments

We classify our foreign currency and interest rate derivative contracts primarily within Level 2 in the fair value hierarchy as the valuation inputs are based on quoted prices and market observable data of similar instruments.

We recognize derivative instruments as either assets or liabilities in the Consolidated Balance Sheets at fair value. We record changes in the fair value (i.e., gains or losses) of the derivatives in the Consolidated Statements of Income as either other income (expense), net, or revenues, or in the Consolidated Balance Sheets in AOCI, as discussed below. Any components excluded from the assessment of hedge effectiveness are recognized in the same income statement line as the hedged item.

We enter into foreign currency contracts with financial institutions to reduce the risk that our cash flows, earnings, and investment in foreign subsidiaries will be adversely affected by foreign currency exchange rate fluctuations. We also use interest rate derivative contracts to hedge interest rate exposures on our fixed income securities and debt issuances. Our program is not used for trading or speculative purposes.

We enter into master netting arrangements, which reduce credit risk by permitting net settlement of transactions with the same counterparty. To further reduce credit risk, we enter into collateral security arrangements under which the counterparty is required to provide collateral when the net fair value of certain financial instruments fluctuates from contractually established thresholds. We can take possession of the collateral in the event of counterparty default. As of December 31, 2018 and 2019, we received cash collateral related to the derivative instruments under our collateral security arrangements of \$327 million and \$252 million, respectively, which was included in other current assets.

Cash Flow Hedges

We use foreign currency forwards and option contracts, including collars (an option strategy comprised of a combination of purchased and written options), designated as cash flow hedges to hedge certain forecasted revenue transactions denominated in currencies other than the U.S. dollar. The notional principal of these contracts was approximately \$11.8 billion and \$13.2 billion as of December 31, 2018 and 2019, respectively. These contracts have maturities of 24 months or less.

For forwards and option contracts, we exclude the change in the forward points and time value from our assessment of hedge effectiveness. The initial value of the excluded component is amortized on a straight-line basis over the life of the hedging instrument and recognized in revenues. The difference between fair value changes of the excluded component and the amount amortized to revenues is recorded in AOCI. We reflect the gains or losses of a cash flow hedge included in our hedge effective assessment as a component of AOCI and subsequently reclassify these gains and losses to revenues when the hedged transactions are recorded. If the hedged transactions become probable of not occurring, the corresponding amounts in AOCI are immediately reclassified to other income (expense), net.

As of December 31, 2019, the net accumulated loss on our foreign currency cash flow hedges before tax effect was \$82 million, of which \$82 million is expected to be reclassified from AOCI into earnings within the next 12 months.

Fair Value Hedges

We use forward contracts designated as fair value hedges to hedge foreign currency risks for our investments denominated in currencies other than the U.S. dollar. We exclude changes in forward points for the forward contracts from the assessment of hedge effectiveness. We recognize changes in the excluded component in other income (expense), net. The notional principal of these contracts was \$2.0 billion and \$455 million as of December 31, 2018 and 2019, respectively.

Gains and losses on these forward contracts are recognized in other income (expense), net, along with the offsetting gains and losses of the related hedged items.

Net Investment Hedges

We use forward contracts designated as net investment hedges to hedge the foreign currency risks related to our investment in foreign subsidiaries. We exclude changes in forward points for the forward contracts from the assessment of hedge effectiveness. We recognize changes in the excluded component in other income (expense),

net. The notional principal of these contracts was \$6.7 billion and \$9.3 billion as of December 31, 2018 and 2019, respectively.

Gains and losses on these forward contracts are recognized in AOCI as part of the foreign currency translation adjustment.

Other Derivatives

Other derivatives not designated as hedging instruments consist of foreign currency forward contracts that we use to hedge intercompany transactions and other monetary assets or liabilities denominated in currencies other than the local currency of a subsidiary. We recognize gains and losses on these contracts, as well as the related costs in other income (expense), net, along with the foreign currency gains and losses on monetary assets and liabilities. The notional principal of the outstanding foreign exchange contracts was \$20.1 billion and \$43.5 billion as of December 31, 2018 and 2019, respectively.

The fair values of our outstanding derivative instruments were as follows (in millions):

		As of December 31, 2018		
	Balance Sheet Location	Fair Value of Derivatives Designated as Hedging Instruments	Fair Value of Derivatives Not Designated as Hedging Instruments	Total Fair Value
Derivative Assets:				
<u>Level 2:</u>				
Foreign exchange contracts	Other current and non-current assets	\$ 459	\$ 54	\$ 513
Total		\$ 459	\$ 54	\$ 513
Derivative Liabilities:				
<u>Level 2:</u>				
Foreign exchange contracts	Accrued expenses and other liabilities, current and non-current	\$ 5	\$ 228	\$ 233
Total		\$ 5	\$ 228	\$ 233
		As of December 31, 2019		
	Balance Sheet Location	Fair Value of Derivatives Designated as Hedging Instruments	Fair Value of Derivatives Not Designated as Hedging Instruments	Total Fair Value
Derivative Assets:				
<u>Level 2:</u>				
Foreign exchange contracts	Other current and non-current assets	\$ 91	\$ 253	\$ 344
Total		\$ 91	\$ 253	\$ 344
Derivative Liabilities:				
<u>Level 2:</u>				
Foreign exchange contracts	Accrued expenses and other liabilities, current and non-current	\$ 173	\$ 196	\$ 369
Total		\$ 173	\$ 196	\$ 369

The gains (losses) on derivatives in cash flow hedging and net investment hedging relationships recognized in other comprehensive income (OCI) are summarized below (in millions):

	Gains (Losses) Recognized in OCI on Derivatives Before Tax Effect		
	Year Ended December 31,		
	2017	2018	2019
Derivatives in Cash Flow Hedging Relationship:			
Foreign exchange contracts			
Amount included in the assessment of effectiveness	\$ (955)	\$ 332	\$ 38
Amount excluded from the assessment of effectiveness	0	26	(14)
Derivatives in Net Investment Hedging Relationship:			
Foreign exchange contracts			
Amount included in the assessment of effectiveness	0	136	131
Total	<u>\$ (955)</u>	<u>\$ 494</u>	<u>\$ 155</u>

The effect of derivative instruments on income is summarized below (in millions):

	Gains (Losses) Recognized in Income					
	Year Ended December 31,					
	2017		2018		2019	
	Revenues	Other income (expense), net	Revenues	Other income (expense), net	Revenues	Other income (expense), net
Total amounts presented in the Consolidated Statements of Income in which the effects of cash flow and fair value hedges are recorded	\$110,855	\$ 1,015	\$136,819	\$ 7,389	\$161,857	\$ 5,394
Gains (Losses) on Derivatives in Cash Flow Hedging Relationship:						
Foreign exchange contracts						
Amount of gains (losses) reclassified from AOCI to income	\$ (169)	\$ 0	\$ (139)	\$ 0	\$ 367	\$ 0
Amount excluded from the assessment of effectiveness recognized in earnings based on an amortization approach	0	0	1	0	88	0
Amount excluded from the assessment of effectiveness	0	83	0	0	0	0
Gains (Losses) on Derivatives in Fair Value Hedging Relationship:						
Foreign exchange contracts						
Hedged items	0	197	0	(96)	0	(19)
Derivatives designated as hedging instruments	0	(197)	0	96	0	19
Amount excluded from the assessment of effectiveness	0	23	0	37	0	25
Gains (Losses) on Derivatives in Net Investment Hedging Relationship:						
Foreign exchange contracts						
Amount excluded from the assessment of effectiveness	0	0	0	78	0	243
Gains (Losses) on Derivatives Not Designated as Hedging Instruments:						
Foreign exchange contracts						
Derivatives not designated as hedging instruments	0	(230)	0	54	0	(413)
Total gains (losses)	<u>\$ (169)</u>	<u>\$ (124)</u>	<u>\$ (138)</u>	<u>\$ 169</u>	<u>\$ 455</u>	<u>\$ (145)</u>

Offsetting of Derivatives

We present our forwards and purchased options at gross fair values in the Consolidated Balance Sheets. For foreign currency collars, we present at net fair values where both purchased and written options are with the same counterparty. Our master netting and other similar arrangements allow net settlements under certain conditions. As of December 31, 2018 and 2019, information related to these offsetting arrangements were as follows (in millions):

Offsetting of Assets

As of December 31, 2018							
	Gross Amounts of Recognized Assets	Gross Amounts Offset in the Consolidated Balance Sheets	Net Presented in the Consolidated Balance Sheets	Gross Amounts Not Offset in the Consolidated Balance Sheets, but Have Legal Rights to Offset			
				Financial Instruments	Cash Collateral Received	Non-Cash Collateral Received	Net Assets Exposed
Derivatives	\$ 569	\$ (56)	\$ 513	\$ (90) ⁽¹⁾	\$ (307)	\$ (14)	\$ 102
As of December 31, 2019							
	Gross Amounts of Recognized Assets	Gross Amounts Offset in the Consolidated Balance Sheets	Net Presented in the Consolidated Balance Sheets	Gross Amounts Not Offset in the Consolidated Balance Sheets, but Have Legal Rights to Offset			
				Financial Instruments	Cash Collateral Received	Non-Cash Collateral Received	Net Assets Exposed
Derivatives	\$ 365	\$ (21)	\$ 344	\$ (88) ⁽¹⁾	\$ (234)	\$ 0	\$ 22

⁽¹⁾ The balances as of December 31, 2018 and 2019 were related to derivative liabilities which are allowed to be net settled against derivative assets in accordance with our master netting agreements.

Offsetting of Liabilities

As of December 31, 2018							
	Gross Amounts of Recognized Liabilities	Gross Amounts Offset in the Consolidated Balance Sheets	Net Presented in the Consolidated Balance Sheets	Gross Amounts Not Offset in the Consolidated Balance Sheets, but Have Legal Rights to Offset			
				Financial Instruments	Cash Collateral Pledged	Non-Cash Collateral Pledged	Net Liabilities
Derivatives	\$ 289	\$ (56)	\$ 233	\$ (90) ⁽²⁾	\$ 0	\$ 0	\$ 143
As of December 31, 2019							
	Gross Amounts of Recognized Liabilities	Gross Amounts Offset in the Consolidated Balance Sheets	Net Presented in the Consolidated Balance Sheets	Gross Amounts Not Offset in the Consolidated Balance Sheets, but Have Legal Rights to Offset			
				Financial Instruments	Cash Collateral Pledged	Non-Cash Collateral Pledged	Net Liabilities
Derivatives	\$ 390	\$ (21)	\$ 369	\$ (88) ⁽²⁾	\$ 0	\$ 0	\$ 281

⁽²⁾ The balances as of December 31, 2018 and 2019 were related to derivative assets which are allowed to be net settled against derivative liabilities in accordance with our master netting agreements.

Note 4. Leases

We have entered into operating and finance lease agreements primarily for data centers, land and offices throughout the world with lease periods expiring between 2020 and 2063.

Components of operating lease expense were as follows (in millions):

	Year Ended December 31, 2019
Operating lease cost	\$ 1,820
Variable lease cost	541
Total operating lease cost	\$ 2,361

Supplemental information related to operating leases was as follows (in millions):

	Year Ended December 31, 2019
Cash payments for operating leases	\$ 1,661
New operating lease assets obtained in exchange for operating lease liabilities	\$ 4,391

As of December 31, 2019, our operating leases had a weighted average remaining lease term of 10 years and a weighted average discount rate of 2.8%. Future lease payments under operating leases as of December 31, 2019 were as follows (in millions):

2020	\$ 1,757
2021	1,845
2022	1,680
2023	1,508
2024	1,301
Thereafter	5,763
Total future lease payments	13,854
Less imputed interest	(2,441)
Total lease liability balance	\$ 11,413

As of December 31, 2019, we have entered into leases that have not yet commenced with future lease payments of \$7.4 billion, excluding purchase options, that are not yet recorded on our Consolidated Balance Sheets. These leases will commence between 2020 and 2026 with non-cancelable lease terms of 1 to 25 years.

Supplemental Information for Comparative Periods

As of December 31, 2018, prior to the adoption of Topic 842, future minimum payments under operating leases having initial or remaining non-cancelable lease terms in excess of one year, net of sublease income amounts, were as follows (in millions):

	Operating Leases ⁽¹⁾	Sub-lease Income	Net Operating Leases
2019	\$ 1,319	\$ 16	\$ 1,303
2020	1,397	13	1,384
2021	1,337	10	1,327
2022	1,153	8	1,145
2023	980	3	977
Thereafter	3,916	5	3,911
Total minimum payments	\$ 10,102	\$ 55	\$ 10,047

⁽¹⁾ Includes future minimum payments for leases which have not yet commenced.

Rent expense under operating leases was \$1.1 billion and \$1.3 billion for the years ended December 31, 2017, and 2018, respectively.

Note 5. Variable Interest Entities (VIEs)

Consolidated VIEs

We consolidate VIEs in which we hold a variable interest and are the primary beneficiary. We are the primary beneficiary because we have the power to direct activities that most significantly affect their economic performance and have the obligation to absorb the majority of their losses or benefits. The results of operations and financial position of these VIEs are included in our consolidated financial statements.

For certain consolidated VIEs, their assets are not available to us and their creditors do not have recourse to us. As of December 31, 2018 and 2019, assets that can only be used to settle obligations of these VIEs were \$2.4 billion and \$3.1 billion, respectively, and the liabilities for which creditors only have recourse to the VIEs were \$909 million and \$1.2 billion, respectively.

Calico

Calico is a life science company with a mission to harness advanced technologies to increase our understanding of the biology that controls lifespan.

In September 2014, AbbVie Inc. (AbbVie) and Calico entered into a research and development collaboration agreement intended to help both companies discover, develop, and bring to market new therapies for patients with age-related diseases, including neurodegeneration and cancer. In the second quarter of 2018, AbbVie and Calico amended the collaboration agreement resulting in an increase in total commitments. As of December 31, 2019, AbbVie has contributed \$1,250 million to fund the collaboration pursuant to the agreement. As of December 31, 2019, Calico has contributed \$500 million and has committed up to an additional \$750 million.

Calico has used its scientific expertise to establish a world-class research and development facility, with a focus on drug discovery and early drug development; and AbbVie provides scientific and clinical development support and its commercial expertise to bring new discoveries to market. Both companies share costs and profits for projects covered under this agreement equally. AbbVie's contribution has been recorded as a liability on Calico's financial statements, which is reduced and reflected as a reduction to research and development expense as eligible research and development costs are incurred by Calico.

As of December 31, 2019, we have contributed \$480 million to Calico in exchange for Calico convertible preferred units and are committed to fund up to an additional \$750 million on an as-needed basis and subject to certain conditions.

Verily

Verily is a life science and healthcare company with a mission to make the world's health data useful so that people enjoy healthier lives. In December 2018, Verily received \$900 million in cash from a \$1.0 billion investment round. The remaining \$100 million was received in the first quarter of 2019. As of December 31, 2019, Verily has received an aggregate amount of \$1.8 billion from sales of equity securities to external investors. These transactions were accounted for as equity transactions and no gain or loss was recognized.

In the fourth quarter of 2019, Verily obtained a controlling financial interest in Onduo, an existing equity method investment. The transaction resulted in a \$357 million gain from the revaluation of the previously held economic interest, which was recognized in other income (expense), net.

Unconsolidated VIEs

Certain of our non-marketable investments, including certain renewable energy investments accounted for under the equity method and certain other investments in private companies, are VIEs. The renewable energy entities' activities involve power generation using renewable sources. Private companies that we invest in are primarily early stage companies.

We have determined that the governance structures of these entities do not allow us to direct the activities that would significantly affect their economic performance. Therefore, we do not consolidate these VIEs in our consolidated financial statements.

The maximum exposure of these unconsolidated VIEs is generally based on the current carrying value of the investments and any future funding commitments. We have determined that the single source of our exposure to these VIEs is our capital investments in them. The carrying value and maximum exposure of these unconsolidated VIEs were not material as of December 31, 2018 and 2019.

Note 6. Debt

Short-Term Debt

We have a debt financing program of up to \$5.0 billion through the issuance of commercial paper. Net proceeds from this program are used for general corporate purposes. We had no commercial paper outstanding as of December 31, 2018 and 2019.

Long-Term Debt

Google issued \$3.0 billion of senior unsecured notes in three tranches (collectively, 2011 Notes) in May 2011, due in 2014, 2016, and 2021, as well as \$1.0 billion of senior unsecured notes (2014 Notes) in February 2014 due in 2024.

In April 2016, we completed an exchange offer with eligible holders of Google's 2011 Notes due 2021 and 2014 Notes due 2024 (collectively, the Google Notes). An aggregate principal amount of approximately \$1.7 billion of the Google Notes was exchanged for approximately \$1.7 billion of Alphabet notes with identical interest rate and maturity.

Because the exchange was between a parent and the subsidiary company and for substantially identical notes, the change was treated as a debt modification for accounting purposes with no gain or loss recognized.

In August 2016, Alphabet issued \$2.0 billion of senior unsecured notes (2016 Notes) due 2026. The net proceeds from the issuance of the 2016 Notes were used for general corporate purposes, including the repayment of outstanding commercial paper. The Alphabet notes due in 2021, 2024, and 2026 rank equally with each other and are structurally subordinate to the outstanding Google Notes.

The total outstanding long-term debt is summarized below (in millions):

	As of December 31, 2018	As of December 31, 2019
3.625% Notes due on May 19, 2021	\$ 1,000	\$ 1,000
3.375% Notes due on February 25, 2024	1,000	1,000
1.998% Notes due on August 15, 2026	2,000	2,000
Unamortized discount for the Notes above	(50)	(42)
Subtotal ⁽¹⁾	3,950	3,958
Total future finance lease payments	62	685
Less: imputed interest for finance leases	0	(89)
Total long-term debt	\$ 4,012	\$ 4,554

⁽¹⁾ Includes the outstanding (and unexchanged) Google Notes issued in 2011 and 2014 and the Alphabet notes exchanged in 2016.

The effective interest yields based on proceeds received from the outstanding notes due in 2021, 2024, and 2026 were 3.734%, 3.377%, and 2.231%, respectively, with interest payable semi-annually. We may redeem these notes at any time in whole or in part at specified redemption prices. The total estimated fair value of all outstanding notes was approximately \$3.9 billion and \$4.1 billion as of December 31, 2018 and 2019, respectively. The fair value was determined based on observable market prices of identical instruments in less active markets and is categorized accordingly as Level 2 in the fair value hierarchy.

As of December 31, 2019, the aggregate future principal payments for long-term debt including long-term finance leases for each of the next five years and thereafter are as follows (in millions):

2020	\$ 0
2021	1,046
2022	46
2023	46
2024	1,047
Thereafter	2,500
Total	\$ 4,685

Credit Facility

As of December 31, 2019, we have \$4.0 billion of revolving credit facilities which expire in July 2023. The interest rate for the credit facilities is determined based on a formula using certain market rates. No amounts were outstanding under the credit facilities as of December 31, 2018 and 2019.

Note 7. Supplemental Financial Statement Information

Property and Equipment, Net

Property and equipment, net, consisted of the following (in millions):

	As of December 31, 2018	As of December 31, 2019
Land and buildings	\$ 30,179	\$ 39,865
Information technology assets	30,119	36,840
Construction in progress	16,838	21,036
Leasehold improvements	5,310	6,310
Furniture and fixtures	61	156
Property and equipment, gross	82,507	104,207
Less: accumulated depreciation	(22,788)	(30,561)
Property and equipment, net	\$ 59,719	\$ 73,646

As of December 31, 2018 and 2019, information technology assets and land and buildings under finance leases with a cost basis of \$648 million and \$1.6 billion, respectively, were included in property and equipment.

Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities consisted of the following (in millions):

	As of December 31, 2018	As of December 31, 2019
European Commission fines ⁽¹⁾	\$ 7,754	\$ 9,405
Accrued customer liabilities	1,810	2,245
Accrued purchases of property and equipment	1,603	2,411
Current operating lease liabilities	0	1,199
Other accrued expenses and current liabilities	5,791	7,807
Accrued expenses and other current liabilities	\$ 16,958	\$ 23,067

⁽¹⁾ Includes the effects of foreign exchange and interest. See Note 10 for further details.

Accumulated Other Comprehensive Income (Loss)

The components of AOCI, net of tax, were as follows (in millions):

	Foreign Currency Translation Adjustments	Unrealized Gains (Losses) on Available-for-Sale Investments	Unrealized Gains (Losses) on Cash Flow Hedges	Total
Balance as of December 31, 2016	\$ (2,646)	\$ (179)	\$ 423	\$ (2,402)
Other comprehensive income (loss) before reclassifications	1,543	307	(638)	1,212
Amounts reclassified from AOCI	0	105	93	198
Other comprehensive income (loss)	1,543	412	(545)	1,410
Balance as of December 31, 2017	(1,103)	233	(122)	(992)
Cumulative effect of accounting change	0	(98)	0	(98)
Other comprehensive income (loss) before reclassifications	(781)	88	264	(429)
Amounts excluded from the assessment of hedge effectiveness recorded in AOCI	0	0	26	26
Amounts reclassified from AOCI	0	(911)	98	(813)
Other comprehensive income (loss)	(781)	(823)	388	(1,216)
Balance as of December 31, 2018	(1,884)	(688)	266	(2,306)
Cumulative effect of accounting change	0	0	(30)	(30)
Other comprehensive income (loss) before reclassifications	(119)	1,611	36	1,528
Amounts excluded from the assessment of hedge effectiveness recorded in AOCI	0	0	(14)	(14)
Amounts reclassified from AOCI	0	(111)	(299)	(410)
Other comprehensive income (loss)	(119)	1,500	(277)	1,104
Balance as of December 31, 2019	\$ (2,003)	\$ 812	\$ (41)	\$ (1,232)

The effects on net income of amounts reclassified from AOCI were as follows (in millions):

AOCI Components		Location		Gains (Losses) Reclassified from AOCI to the Consolidated Statements of Income			
				Year Ended December 31,			
				2017	2018	2019	
Unrealized gains (losses) on available-for-sale investments							
	Other income (expense), net	\$	(105)	\$	1,190	\$	149
	Benefit (provision) for income taxes		0		(279)		(38)
	Net of tax		(105)		911		111
Unrealized gains (losses) on cash flow hedges							
Foreign exchange contracts	Revenue		(169)		(139)		367
Interest rate contracts	Other income (expense), net		5		6		6
	Benefit (provision) for income taxes		71		35		(74)
	Net of tax		(93)		(98)		299
Total amount reclassified, net of tax		\$	(198)	\$	813	\$	410

Other Income (Expense), Net

The components of other income (expense), net, were as follows (in millions):

	Year Ended December 31,		
	2017	2018	2019
Interest income	\$ 1,312	\$ 1,878	\$ 2,427
Interest expense ⁽¹⁾	(109)	(114)	(100)
Foreign currency exchange gain (loss), net ⁽²⁾	(121)	(80)	103
Gain (loss) on debt securities, net ⁽³⁾	(110)	1,190	149
Gain (loss) on equity securities, net	73	5,460	2,649
Performance fees ⁽⁴⁾	(32)	(1,203)	(326)
Gain (loss) and impairment from equity method investments, net	(156)	(120)	390
Other	158	378	102
Other income (expense), net	\$ 1,015	\$ 7,389	\$ 5,394

(1) Interest expense is net of interest capitalized of \$48 million, \$92 million, and \$167 million for the years ended December 31, 2017, 2018, and 2019, respectively.

(2) Our foreign currency exchange gain (loss), net, are related to the option premium costs and forwards points for our foreign currency hedging contracts, our foreign exchange transaction gains and losses from the conversion of the transaction currency to the functional currency, offset by the foreign currency hedging contract losses and gains. The net foreign currency transaction losses were \$226 million, \$195 million, and \$166 million for the years ended December 31, 2017, 2018, and 2019, respectively.

(3) During the year ended December 31, 2018, the terms of a non-marketable debt security were modified resulting in an unrealized \$1.3 billion gain.

(4) Performance fees were reclassified for prior periods from general and administrative expenses to other income (expense), net to conform with current period presentation.

Note 8. Acquisitions**2019 Acquisitions****Looker**

In December 2019, we obtained all regulatory clearances necessary to close the acquisition of Looker, a unified platform for business intelligence, data applications and embedded analytics for \$2.4 billion, with integration pending approval from a UK regulatory review. The addition of Looker to Google Cloud is expected to help customers accelerate how they analyze data, deliver business intelligence, and build data-driven applications.

The fair value of assets acquired and liabilities assumed was recorded based on a preliminary valuation and our estimates and assumptions are subject to change within the measurement period. The \$2.4 billion purchase price includes our previously held equity interest and excludes post acquisition compensation arrangements. In aggregate, \$91 million was cash acquired, \$290 million was attributed to intangible assets, \$1.9 billion to goodwill and \$48 million to net assets acquired. Goodwill was recorded in the Google segment and primarily attributable to synergies expected to arise after the acquisition. Goodwill is not expected to be deductible for tax purposes.

Other Acquisitions

During the year ended December 31, 2019, we completed other acquisitions and purchases of intangible assets for total consideration of approximately \$1.0 billion. In aggregate, \$28 million was cash acquired, \$282 million was attributed to intangible assets, \$904 million to goodwill and \$185 million to net liabilities assumed. These acquisitions generally enhance the breadth and depth of our offerings and expand our expertise in engineering and other functional areas.

Pro forma results of operations for these acquisitions, including Looker, have not been presented because they are not material to the consolidated results of operations, either individually or in the aggregate.

For all intangible assets acquired and purchased during the year ended December 31, 2019, patents and developed technology have a weighted-average useful life of 3.5 years, customer relationships have a weighted-average useful life of 6.3 years, and trade names and other have a weighted-average useful life of 4.5 years.

Pending Acquisition of Fitbit

In November 2019, we entered into an agreement to acquire Fitbit, a leading wearables brand, for \$7.35 per share, representing a total purchase price of approximately \$2.1 billion as of the date of the agreement. The acquisition

of Fitbit is expected to be completed in 2020, subject to customary closing conditions, including the receipt of regulatory approvals. Upon the close of the acquisition, Fitbit will be part of Google segment.

Note 9. Goodwill and Other Intangible Assets

Goodwill

Changes in the carrying amount of goodwill for the years ended December 31, 2018 and 2019 were as follows (in millions):

	Google	Other Bets	Total Consolidated
Balance as of December 31, 2017	\$ 16,295	\$ 452	\$ 16,747
Acquisitions	1,227	0	1,227
Transfers	80	(80)	0
Foreign currency translation and other adjustments	(81)	(5)	(86)
Balance as of December 31, 2018	17,521	367	17,888
Acquisitions	2,353	475	2,828
Transfers	9	(9)	0
Foreign currency translation and other adjustments	38	(130)	(92)
Balance as of December 31, 2019	\$ 19,921	\$ 703	\$ 20,624

Other Intangible Assets

Information regarding purchased intangible assets were as follows (in millions):

	As of December 31, 2018		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Patents and developed technology	\$ 5,125	\$ 3,394	\$ 1,731
Customer relationships	349	308	41
Trade names and other	703	255	448
Total	\$ 6,177	\$ 3,957	\$ 2,220

	As of December 31, 2019		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Value
Patents and developed technology	\$ 4,972	\$ 3,570	\$ 1,402
Customer relationships	254	30	224
Trade names and other	703	350	353
Total	\$ 5,929	\$ 3,950	\$ 1,979

Patents and developed technology, customer relationships, and trade names and other have weighted-average remaining useful lives of 2.3 years, 5.6 years, and 3.0 years, respectively.

Amortization expense relating to purchased intangible assets was \$796 million, \$865 million, and \$795 million for the years ended December 31, 2017, 2018, and 2019, respectively.

As of December 31, 2019, expected amortization expense relating to purchased intangible assets for each of the next five years and thereafter is as follows (in millions):

2020	\$	749
2021		665
2022		317
2023		57
2024		45
Thereafter		146
	\$	<u>1,979</u>

Note 10. Commitments and Contingencies

Purchase Obligations

As of December 31, 2019, we had \$5.7 billion of other non-cancelable contractual obligations, primarily related to data center operations and build-outs, digital media content licensing, and purchases of inventory.

Indemnifications

In the normal course of business, to facilitate transactions in our services and products, we indemnify certain parties, including advertisers, Google Network Members, customers of Google Cloud offerings, and lessors with respect to certain matters. We have agreed to hold certain parties harmless against losses arising from a breach of representations or covenants, or out of intellectual property infringement or other claims made against certain parties. Several of these agreements limit the time within which an indemnification claim can be made and the amount of the claim. In addition, we have entered into indemnification agreements with our officers and directors, and our bylaws contain similar indemnification obligations to our agents.

It is not possible to make a reasonable estimate of the maximum potential amount under these indemnification agreements due to the unique facts and circumstances involved in each particular agreement. Additionally, we have a limited history of prior indemnification claims and the payments we have made under such agreements have not had a material adverse effect on our results of operations, cash flows, or financial position. However, to the extent that valid indemnification claims arise in the future, future payments by us could be significant and could have a material adverse effect on our results of operations or cash flows in a particular period.

As of December 31, 2019, we did not have any material indemnification claims that were probable or reasonably possible.

Legal Matters

Antitrust Investigations

On November 30, 2010, the EC's Directorate General for Competition opened an investigation into various antitrust-related complaints against us.

On June 27, 2017, the EC announced its decision that certain actions taken by Google regarding its display and ranking of shopping search results and ads infringed European competition law. The EC decision imposed a €2.4 billion (\$2.7 billion as of June 27, 2017) fine. On September 11, 2017, we appealed the EC decision and on September 27, 2017, we implemented product changes to bring shopping ads into compliance with the EC's decision. We recognized a charge of \$2.7 billion for the fine in the second quarter of 2017.

On July 18, 2018, the EC announced its decision that certain provisions in Google's Android-related distribution agreements infringed European competition law. The EC decision imposed a €4.3 billion (\$5.1 billion as of June 30, 2018) fine and directed the termination of the conduct at issue. On October 9, 2018, we appealed the EC decision. On October 29, 2018, we implemented changes to certain of our Android distribution practices. We recognized a charge of \$5.1 billion for the fine in the second quarter of 2018.

On March 20, 2019, the EC announced its decision that certain contractual provisions in agreements that Google had with AdSense for Search partners infringed European competition law. The EC decision imposed a fine of €1.5 billion (\$1.7 billion as of March 20, 2019) and directed actions related to AdSense for Search agreements, which we implemented prior to the decision. On June 4, 2019, we appealed the EC decision. We recognized a charge of \$1.7 billion for the fine in the first quarter of 2019.

While each EC decision is under appeal, we included the fines in accrued expenses and other current liabilities on our Consolidated Balance Sheets as we provided bank guarantees (in lieu of a cash payment) for the fines.

From time to time we are subject to formal and informal inquiries and investigations by competition authorities in the United States, Europe, and other jurisdictions. For example, in August 2019, we began receiving civil investigative demands from the U.S. Department of Justice requesting information and documents relating to our prior antitrust investigations and certain of our business practices. Attorneys general from 51 U.S. states and territories have also opened antitrust investigations into certain of our business practices. We continue to cooperate with federal and state regulators in the United States, and other regulators around the world.

Patent and Intellectual Property Claims

We have had patent, copyright, trade secret, and trademark infringement lawsuits filed against us claiming that certain of our products, services, and technologies infringe others' intellectual property rights. Adverse results in these lawsuits may include awards of substantial monetary damages, costly royalty or licensing agreements, or orders preventing us from offering certain features, functionalities, products, or services. As a result, we may have to change our business practices, and develop non-infringing products or technologies, which could result in a loss of revenues for us and otherwise harm our business. In addition, the U.S. International Trade Commission (ITC) has increasingly become an important forum to litigate intellectual property disputes because an ultimate loss in an ITC action can result in a prohibition on importing infringing products into the U.S. Because the U.S. is an important market, a prohibition on importation could have an adverse effect on us, including preventing us from importing many important products into the U.S. or necessitating workarounds that may limit certain features of our products.

Furthermore, many of our agreements with our customers and partners require us to indemnify them against certain intellectual property infringement claims, which would increase our costs as a result of defending such claims, and may require that we pay significant damages if there were an adverse ruling in any such claims. In addition, our customers and partners may discontinue the use of our products, services, and technologies, as a result of injunctions or otherwise, which could result in loss of revenues and adversely affect our business.

In 2010, Oracle America, Inc. (Oracle) brought a copyright lawsuit against Google in the Northern District of California, alleging that Google's Android operating system infringes Oracle's copyrights related to certain Java application programming interfaces. After trial, final judgment was entered by the district court in favor of Google on June 8, 2016, and the court decided post-trial motions in favor of Google. Oracle appealed and on March 27, 2018, the appeals court reversed and remanded the case for a trial on damages. On May 29, 2018, we filed a petition for a rehearing at the Federal Circuit, and on August 28, 2018, the Federal Circuit denied the petition. On January 24, 2019, we filed a petition to the Supreme Court of the United States to review this case. On April 29, 2019, the Supreme Court requested the views of the Solicitor General regarding our petition. On September 27, 2019, the Solicitor General recommended denying our petition, and we provided our response on October 16, 2019. On November 15, 2019, the Supreme Court granted our petition and made a decision to review the case. If the Supreme Court does not rule in our favor, the case will be remanded to the district court for further determination of the remaining issues in the case, including damages, if any. We believe this lawsuit is without merit and are defending ourselves vigorously. Given the nature of this case, we are unable to estimate the reasonably possible loss or range of loss, if any, arising from this matter.

Other

We are also regularly subject to claims, suits, regulatory and government investigations, and other proceedings involving competition, intellectual property, privacy, tax and related compliance, labor and employment, commercial disputes, content generated by our users, goods and services offered by advertisers or publishers using our platforms, personal injury, consumer protection, and other matters. Such claims, suits, regulatory and government investigations, and other proceedings could result in fines, civil or criminal penalties, or other adverse consequences.

Certain of these outstanding matters include speculative, substantial or indeterminate monetary amounts. We record a liability when we believe that it is probable that a loss has been incurred and the amount can be reasonably estimated. If we determine that a loss is reasonably possible and the loss or range of loss can be estimated, we disclose the reasonably possible loss. We evaluate developments in our legal matters that could affect the amount of liability that has been previously accrued, and the matters and related reasonably possible losses disclosed, and make adjustments as appropriate. Significant judgment is required to determine both likelihood of there being and the estimated amount of a loss related to such matters.

With respect to our outstanding matters, based on our current knowledge, we believe that the amount or range of reasonably possible loss will not, either individually or in aggregate, have a material adverse effect on our business,

consolidated financial position, results of operations, or cash flows. However, the outcome of such matters is inherently unpredictable and subject to significant uncertainties.

We expense legal fees in the period in which they are incurred.

Non-Income Taxes

We are under audit by various domestic and foreign tax authorities with regards to non-income tax matters. The subject matter of non-income tax audits primarily arises from disputes on the tax treatment and tax rate applied to the sale of our products and services in these jurisdictions and the tax treatment of certain employee benefits. We accrue non-income taxes that may result from examinations by, or any negotiated agreements with, these tax authorities when a loss is probable and reasonably estimable. If we determine that a loss is reasonably possible and the loss or range of loss can be estimated, we disclose the reasonably possible loss. We believe these matters are without merit and we are defending ourselves vigorously. Due to the inherent complexity and uncertainty of these matters and judicial process in certain jurisdictions, the final outcome may be materially different from our expectations.

For information regarding income tax contingencies, see Note 14.

Note 11. Stockholders' Equity

Convertible Preferred Stock

Our board of directors has authorized 100 million shares of convertible preferred stock, \$0.001 par value, issuable in series. As of December 31, 2018 and 2019, no shares were issued or outstanding.

Class A and Class B Common Stock and Class C Capital Stock

Our board of directors has authorized three classes of stock, Class A and Class B common stock, and Class C capital stock. The rights of the holders of each class of our common and capital stock are identical, except with respect to voting. Each share of Class A common stock is entitled to one vote per share. Each share of Class B common stock is entitled to 10 votes per share. Class C capital stock has no voting rights, except as required by applicable law. Shares of Class B common stock may be converted at any time at the option of the stockholder and automatically convert upon sale or transfer to Class A common stock.

Share Repurchases

In January 2018, the board of directors of Alphabet authorized the company to repurchase up to \$8.6 billion of its Class C capital stock. In January and July 2019, the board of directors of Alphabet authorized the company to repurchase up to an additional \$12.5 billion and \$25.0 billion of its Class C capital stock, respectively. Share repurchases pursuant to the January 2018 and January 2019 authorizations were completed in 2019. The repurchases are being executed from time to time, subject to general business and market conditions and other investment opportunities, through open market purchases or privately negotiated transactions, including through Rule 10b5-1 plans. The repurchase program does not have an expiration date.

During the years ended December 31, 2018 and 2019, we repurchased and subsequently retired 8.2 million shares of Alphabet Class C capital stock for an aggregate amount of \$9.1 billion and 15.3 million shares of Alphabet Class C capital stock for an aggregate amount of \$18.4 billion, respectively.

Note 12. Net Income Per Share

We compute net income per share of Class A and Class B common stock and Class C capital stock using the two-class method. Basic net income per share is computed using the weighted-average number of shares outstanding during the period. Diluted net income per share is computed using the weighted-average number of shares and the effect of potentially dilutive securities outstanding during the period. Potentially dilutive securities consist of restricted stock units and other contingently issuable shares. The dilutive effect of outstanding restricted stock units and other contingently issuable shares is reflected in diluted earnings per share by application of the treasury stock method. The computation of the diluted net income per share of Class A common stock assumes the conversion of Class B common stock, while the diluted net income per share of Class B common stock does not assume the conversion of those shares.

The rights, including the liquidation and dividend rights, of the holders of our Class A and Class B common stock and Class C capital stock are identical, except with respect to voting. Furthermore, there are a number of safeguards built into our certificate of incorporation, as well as Delaware law, which preclude our board of directors from declaring or paying unequal per share dividends on our Class A and Class B common stock and Class C capital stock. Specifically, Delaware law provides that amendments to our certificate of incorporation which would have the effect of adversely altering the rights, powers, or preferences of a given class of stock must be approved by the class of stock adversely

affected by the proposed amendment. In addition, our certificate of incorporation provides that before any such amendment may be put to a stockholder vote, it must be approved by the unanimous consent of our board of directors. As a result, the undistributed earnings for each year are allocated based on the contractual participation rights of the Class A and Class B common shares and Class C capital stock as if the earnings for the year had been distributed. As the liquidation and dividend rights are identical, the undistributed earnings are allocated on a proportionate basis.

In the years ended December 31, 2017, 2018 and 2019, the net income per share amounts are the same for Class A and Class B common stock and Class C capital stock because the holders of each class are entitled to equal per share dividends or distributions in liquidation in accordance with the Amended and Restated Certificate of Incorporation of Alphabet Inc.

The following tables set forth the computation of basic and diluted net income per share of Class A and Class B common stock and Class C capital stock (in millions, except share amounts which are reflected in thousands and per share amounts):

	Year Ended December 31,		
	2017		
	Class A	Class B	Class C
Basic net income per share:			
Numerator			
Allocation of undistributed earnings	\$ 5,438	\$ 862	\$ 6,362
Denominator			
Number of shares used in per share computation	297,604	47,146	348,151
Basic net income per share	\$ 18.27	\$ 18.27	\$ 18.27
Diluted net income per share:			
Numerator			
Allocation of undistributed earnings for basic computation	\$ 5,438	\$ 862	\$ 6,362
Reallocation of undistributed earnings as a result of conversion of Class B to Class A shares	862	0	0
Reallocation of undistributed earnings	(74)	(14)	74
Allocation of undistributed earnings	\$ 6,226	\$ 848	\$ 6,436
Denominator			
Number of shares used in basic computation	297,604	47,146	348,151
Weighted-average effect of dilutive securities			
Add:			
Conversion of Class B to Class A common shares outstanding	47,146	0	0
Restricted stock units and other contingently issuable shares	1,192	0	9,491
Number of shares used in per share computation	345,942	47,146	357,642
Diluted net income per share	\$ 18.00	\$ 18.00	\$ 18.00

	Year Ended December 31,		
	2018		
	Class A	Class B	Class C
Basic net income per share:			
Numerator			
Allocation of undistributed earnings	\$ 13,200	\$ 2,072	\$ 15,464
Denominator			
Number of shares used in per share computation	298,548	46,864	349,728
Basic net income per share	\$ 44.22	\$ 44.22	\$ 44.22
Diluted net income per share:			
Numerator			
Allocation of undistributed earnings for basic computation	\$ 13,200	\$ 2,072	\$ 15,464
Reallocation of undistributed earnings as a result of conversion of Class B to Class A shares	2,072	0	0
Reallocation of undistributed earnings	(146)	(24)	146
Allocation of undistributed earnings	\$ 15,126	\$ 2,048	\$ 15,610
Denominator			
Number of shares used in basic computation	298,548	46,864	349,728
Weighted-average effect of dilutive securities			
Add:			
Conversion of Class B to Class A common shares outstanding	46,864	0	0
Restricted stock units and other contingently issuable shares	689	0	7,456
Number of shares used in per share computation	346,101	46,864	357,184
Diluted net income per share	\$ 43.70	\$ 43.70	\$ 43.70
	Year Ended December 31,		
	2019		
	Class A	Class B	Class C
Basic net income per share:			
Numerator			
Allocation of undistributed earnings	\$ 14,846	\$ 2,307	\$ 17,190
Denominator			
Number of shares used in per share computation	299,402	46,527	346,667
Basic net income per share	\$ 49.59	\$ 49.59	\$ 49.59
Diluted net income per share:			
Numerator			
Allocation of undistributed earnings for basic computation	\$ 14,846	\$ 2,307	\$ 17,190
Reallocation of undistributed earnings as a result of conversion of Class B to Class A shares	2,307	0	0
Reallocation of undistributed earnings	(126)	(20)	126
Allocation of undistributed earnings	\$ 17,027	\$ 2,287	\$ 17,316
Denominator			
Number of shares used in basic computation	299,402	46,527	346,667
Weighted-average effect of dilutive securities			
Add:			
Conversion of Class B to Class A common shares outstanding	46,527	0	0
Restricted stock units and other contingently issuable shares	413	0	5,547
Number of shares used in per share computation	346,342	46,527	352,214
Diluted net income per share	\$ 49.16	\$ 49.16	\$ 49.16

Note 13. Compensation Plans

Stock Plans

Under our 2012 Stock Plan, RSUs or stock options may be granted. An RSU award is an agreement to issue shares of our publicly traded stock at the time the award vests. Incentive and non-qualified stock options, or rights to purchase common stock, are generally granted for a term of 10 years. RSUs granted to participants under the 2012 Stock Plan generally vest over four years contingent upon employment or service with us on the vesting date.

As of December 31, 2019, there were 37,982,435 shares of stock reserved for future issuance under our Stock Plan.

Additionally, we have stock-based awards that may be settled in the stock of certain of our Other Bets.

Stock-Based Compensation

For the years ended December 31, 2017, 2018 and 2019, total stock-based compensation expense was \$7.9 billion, \$10.0 billion and \$11.7 billion, including amounts associated with awards we expect to settle in Alphabet stock of \$7.7 billion, \$9.4 billion, and \$10.8 billion, respectively.

For the years ended December 31, 2017, 2018 and 2019, we recognized tax benefits on total stock-based compensation expense, which are reflected in the provision for income taxes in the Consolidated Statements of Income, of \$1.6 billion, \$1.5 billion, and \$1.8 billion, respectively.

For the years ended December 31, 2017, 2018 and 2019, tax benefit realized related to awards vested or exercised during the period was \$2.7 billion, \$2.1 billion and \$2.2 billion, respectively. These amounts do not include the indirect effects of stock-based awards, which primarily relate to the research and development tax credit.

Stock-Based Award Activities

The following table summarizes the activities for our unvested RSUs in Alphabet stock for the year ended December 31, 2019:

	Unvested Restricted Stock Units	
	Number of Shares	Weighted-Average Grant-Date Fair Value
Unvested as of December 31, 2018	18,467,678	\$ 936.96
Granted	13,934,041	\$ 1,092.36
Vested	(11,576,766)	\$ 919.28
Forfeited/canceled	(1,430,717)	\$ 990.56
Unvested as of December 31, 2019	19,394,236	\$ 1,055.22

The weighted-average grant-date fair value of RSUs granted during the years ended December 31, 2017 and 2018, was \$845.06 and \$1,095.89, respectively. Total fair value of RSUs, as of their respective vesting dates, during the years ended December 31, 2017, 2018, and 2019 were \$11.3 billion, \$14.1 billion, and \$15.2 billion, respectively.

As of December 31, 2019, there was \$19.1 billion of unrecognized compensation cost related to unvested employee RSUs. This amount is expected to be recognized over a weighted-average period of 2.6 years.

401(k) Plans

We have two 401(k) Savings Plans that qualify as deferred salary arrangements under Section 401(k) of the Internal Revenue Code. Under these 401(k) Plans, matching contributions are based upon the amount of the employees' contributions subject to certain limitations. We recognized expense of approximately \$448 million, \$691 million, and \$724 million for the years ended December 31, 2017, 2018, and 2019, respectively.

Note 14. Income Taxes

Income from continuing operations before income taxes consists of the following (in millions):

	Year Ended December 31,		
	2017	2018	2019
Domestic operations	\$ 10,680	\$ 15,779	\$ 16,426
Foreign operations	16,513	19,134	23,199
Total	<u>\$ 27,193</u>	<u>\$ 34,913</u>	<u>\$ 39,625</u>

The provision for income taxes consists of the following (in millions):

	Year Ended December 31,		
	2017	2018	2019
Current:			
Federal and state	\$ 12,608	\$ 2,153	\$ 2,424
Foreign	1,746	1,251	2,713
Total	<u>14,354</u>	<u>3,404</u>	<u>5,137</u>
Deferred:			
Federal and state	220	907	286
Foreign	(43)	(134)	(141)
Total	<u>177</u>	<u>773</u>	<u>145</u>
Provision for income taxes	<u>\$ 14,531</u>	<u>\$ 4,177</u>	<u>\$ 5,282</u>

The Tax Act enacted on December 22, 2017 introduced significant changes to U.S. income tax law. Effective 2018, the Tax Act reduced the U.S. statutory tax rate from 35% to 21% and created new taxes on certain foreign-sourced earnings and certain related-party payments.

Due to the timing of the enactment and the complexity involved in applying the provisions of the Tax Act, we made reasonable estimates of the effects and recorded provisional amounts in our consolidated financial statements as of December 31, 2017. As we collected and prepared necessary data, and interpreted the additional guidance issued by the U.S. Treasury Department, the IRS, and other standard-setting bodies, we made adjustments, over the course of 2018, to the provisional amounts including refinements to deferred taxes. The accounting for the tax effects of the Tax Act was completed as of December 31, 2018.

Transition tax

The Tax Act required us to pay U.S. income taxes on accumulated foreign subsidiary earnings not previously subject to U.S. income tax at a rate of 15.5% to the extent of foreign cash and certain other net current assets and 8% on the remaining earnings. We recorded a provisional amount for our transitional tax liability and income tax expense of \$10.2 billion as of December 31, 2017. Subsequent adjustments in 2018 and 2019 were not material.

Deferred tax effects

Due to the change in the statutory tax rate from the Tax Act, we remeasured our deferred taxes as of December 31, 2017 to reflect the reduced rate that will apply in future periods when these deferred taxes are settled or realized. We recognized a deferred tax benefit of \$376 million to reflect the reduced U.S. tax rate and other effects of the Tax Act as of December 31, 2017.

The reconciliation of federal statutory income tax rate to our effective income tax rate is as follows:

	Year Ended December 31,		
	2017	2018	2019
U.S. federal statutory tax rate	35.0%	21.0%	21.0%
Foreign income taxed at different rates	(14.2)	(4.9)	(5.6)
Effect of the Tax Act			
Transition tax	37.6	(0.1)	(0.6)
Deferred tax effects	(1.4)	(1.2)	0.0
Federal research credit	(1.8)	(2.4)	(2.5)
Stock-based compensation expense	(4.5)	(2.2)	(0.7)
European Commission fines	3.5	3.1	1.0
Deferred tax asset valuation allowance	0.9	(2.0)	0.0
State and local income taxes	0.1	(0.4)	1.1
Other adjustments	(1.8)	1.1	(0.4)
Effective tax rate	53.4%	12.0%	13.3%

Our effective tax rate for each of the years presented was affected by earnings realized in foreign jurisdictions with statutory tax rates lower than the federal statutory tax rate. Substantially all of the income from foreign operations was earned by an Irish subsidiary. Beginning in 2018, earnings realized in foreign jurisdictions are subject to U.S. tax in accordance with the Tax Act.

On July 27, 2015, the United States Tax Court, in an opinion in *Altera Corp. v. Commissioner*, invalidated the portion of the Treasury regulations issued under IRC Section 482 requiring related-party participants in a cost sharing arrangement to share stock-based compensation costs. The U.S. Tax Court issued the final decision on December 28, 2015. As a result of that decision, we recorded a tax benefit related to the anticipated reimbursement of cost share payment for previously shared stock-based compensation costs.

On June 7, 2019, the United States Court of Appeals for the Ninth Circuit overturned the 2015 Tax Court decision in *Altera Corp. v. Commissioner*, and upheld the portion of the Treasury regulations issued under IRC Section 482 requiring related-party participants in a cost sharing arrangement to share stock-based compensation costs. As a result of the Ninth Circuit court decision, our cumulative net tax benefit of \$418 million related to previously shared stock-based compensation costs was reversed in the year ended December 31, 2019.

Deferred Income Taxes

Deferred income taxes reflect the net effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of our deferred tax assets and liabilities are as follows (in millions):

	As of December 31,	
	2018	2019
Deferred tax assets:		
Stock-based compensation expense	\$ 291	\$ 421
Accrued employee benefits	387	463
Accruals and reserves not currently deductible	902	1,047
Tax credits	1,979	3,264
Basis difference in investment in Arris	657	0
Prepaid cost sharing	597	0
Net operating losses	557	771
Operating leases	160	1,876
Other	21	390
Total deferred tax assets	5,551	8,232
Valuation allowance	(2,817)	(3,502)
Total deferred tax assets net of valuation allowance	2,734	4,730
Deferred tax liabilities:		
Property and equipment, net	(1,382)	(1,798)
Renewable energy investments	(500)	(466)
Foreign Earnings	(111)	(373)
Net investment gains	(1,143)	(1,074)
Operating leases	0	(1,619)
Other	(125)	(380)
Total deferred tax liabilities	(3,261)	(5,710)
Net deferred tax assets (liabilities)	\$ (527)	\$ (980)

As of December 31, 2019, our federal, state and foreign net operating loss carryforwards for income tax purposes were approximately \$1.8 billion, \$3.1 billion, and \$1.9 billion respectively. If not utilized, the federal and foreign net operating loss carryforwards will begin to expire in 2021 and the state net operating loss carryforwards will begin to expire in 2020. It is more likely than not that certain net operating loss carryforwards will not be realized; therefore, we have recorded a valuation allowance against them. The net operating loss carryforwards are subject to various annual limitations under the tax laws of the different jurisdictions.

As of December 31, 2019, our California research and development credit carryforwards for income tax purposes were approximately \$3.0 billion that can be carried over indefinitely. We believe the state tax credit is not likely to be realized.

As of December 31, 2019, we maintained a valuation allowance with respect to California deferred tax assets, certain federal net operating losses, certain state tax credits and certain foreign net operating losses that we believe are not likely to be realized. Due to gains from equity securities recognized, we released the valuation allowance in 2018 against the deferred tax asset for the book-to-tax basis difference in our investments in Arris shares received from the sale of the Motorola Home business to Arris in 2013. We continue to reassess the remaining valuation allowance quarterly and if future evidence allows for a partial or full release of the valuation allowance, a tax benefit will be recorded accordingly.

Uncertain Tax Positions

The following table summarizes the activity related to our gross unrecognized tax benefits (in millions):

	Year Ended December 31,		
	2017	2018	2019
Beginning gross unrecognized tax benefits	\$ 5,393	\$ 4,696	\$ 4,652
Increases related to prior year tax positions	685	321	938
Decreases related to prior year tax positions	(257)	(623)	(143)
Decreases related to settlement with tax authorities	(1,875)	(191)	(2,886)
Increases related to current year tax positions	750	449	816
Ending gross unrecognized tax benefits	<u>\$ 4,696</u>	<u>\$ 4,652</u>	<u>\$ 3,377</u>

The total amount of gross unrecognized tax benefits was \$4.7 billion, \$4.7 billion, and \$3.4 billion as of December 31, 2017, 2018, and 2019, respectively, of which, \$3.0 billion, \$2.9 billion, and \$2.3 billion, if recognized, would affect our effective tax rate, respectively. The decrease in gross unrecognized tax benefits in 2017 and 2019 was primarily as a result of the resolution of multi-year audits.

As of December 31, 2018 and 2019, we had accrued \$490 million and \$130 million in interest and penalties in provision for income taxes, respectively.

We file income tax returns in the U.S. federal jurisdiction and in many state and foreign jurisdictions, our two major tax jurisdictions are the U.S. federal and Ireland. We are subject to the continuous examination of our income tax returns by the IRS and other tax authorities. The IRS completed its examination through our 2015 tax years; all issues have been concluded and the IRS will commence its examination of our 2016 through 2018 tax returns. We have also received tax assessments in multiple foreign jurisdictions asserting transfer pricing adjustments or permanent establishment. We continue to defend any and all such claims as presented.

The tax years 2011 through 2018 remain subject to examination by the appropriate governmental agencies for Irish tax purposes. There are other ongoing audits in various other jurisdictions that are not material to our financial statements.

We regularly assess the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. We continue to monitor the progress of ongoing discussions with tax authorities and the effect, if any, of the expected expiration of the statute of limitations in various taxing jurisdictions.

We believe that an adequate provision has been made for any adjustments that may result from tax examinations. However, the outcome of tax audits cannot be predicted with certainty. If any issues addressed in our tax audits are resolved in a manner not consistent with management's expectations, we could be required to adjust our provision for income taxes in the period such resolution occurs. Although the timing of resolution, settlement, and closure of audits is not certain, we do not believe it is reasonably possible that our unrecognized tax benefits will materially change in the next 12 months.

Note 15. Information about Segments and Geographic Areas

We operate our business in multiple operating segments. Google is our only reportable segment. None of our other segments meet the quantitative thresholds to qualify as reportable segments; therefore, the other operating segments are combined and disclosed as Other Bets.

Our reported segments are:

- Google – Google includes our main products such as ads, Android, Chrome, hardware, Google Cloud, Google Maps, Google Play, Search, and YouTube. Our technical infrastructure is also included in Google. Google generates revenues primarily from advertising; sales of apps, in-app purchases, digital content products, and hardware; and licensing and service fees, including fees received for Google Cloud offerings and subscription-based products.
- Other Bets – Other Bets is a combination of multiple operating segments that are not individually material. Other Bets includes Access, Calico, CapitalG, GV, Verily, Waymo, and X, among others. Revenues from the Other Bets are derived primarily through the sales of internet and TV services through Access as well as licensing and R&D services through Verily.

Revenues, cost of revenues, and operating expenses are generally directly attributed to our segments. Inter-segment revenues are not presented separately, as these amounts are immaterial. Our Chief Operating Decision Maker does not evaluate operating segments using asset information.

Information about segments during the periods presented were as follows (in millions):

	Year Ended December 31,		
	2017	2018	2019
Revenues:			
Google	\$ 110,547	\$ 136,362	\$ 160,743
Other Bets	477	595	659
Hedging gains (losses)	(169)	(138)	455
Total revenues	<u>\$ 110,855</u>	<u>\$ 136,819</u>	<u>\$ 161,857</u>

	Year Ended December 31,		
	2017	2018	2019
Operating income (loss):			
Google	\$ 32,456	\$ 36,655	\$ 41,673
Other Bets	(2,734)	(3,358)	(4,824)
Reconciling items ⁽¹⁾	(3,544)	(5,773)	(2,618)
Total income from operations	<u>\$ 26,178</u>	<u>\$ 27,524</u>	<u>\$ 34,231</u>

⁽¹⁾ Reconciling items are generally comprised of corporate administrative costs, hedging gains (losses) and other miscellaneous items that are not allocated to individual segments. Reconciling items include the European Commission fines for the years ended December 31, 2017, 2018 and 2019, and a charge from a legal settlement for the year ended December 31, 2019. Performance fees previously included in reconciling items were reclassified for the years ended December 31, 2017 and 2018 from general and administrative expenses to other income (expense), net to conform with current period presentation. For further information on the reclassification, see Note 1.

	Year Ended December 31,		
	2017	2018	2019
Capital expenditures:			
Google	\$ 12,619	\$ 25,460	\$ 25,251
Other Bets	493	181	281
Reconciling items ⁽²⁾	72	(502)	(1,984)
Total capital expenditures as presented on the Consolidated Statements of Cash Flows	<u>\$ 13,184</u>	<u>\$ 25,139</u>	<u>\$ 23,548</u>

⁽²⁾ Reconciling items are related to timing differences of payments as segment capital expenditures are on accrual basis while total capital expenditures shown on the Consolidated Statements of Cash Flow are on cash basis and other miscellaneous differences.

Stock-based compensation (SBC) and depreciation, amortization, and impairment are included in segment operating income (loss) as shown below (in millions):

	Year Ended December 31,		
	2017	2018	2019
Stock-based compensation:			
Google	\$ 7,168	\$ 8,755	\$ 10,185
Other Bets	363	489	474
Reconciling items ⁽³⁾	148	109	135
Total stock-based compensation ⁽⁴⁾	<u>\$ 7,679</u>	<u>\$ 9,353</u>	<u>\$ 10,794</u>
Depreciation, amortization, and impairment:			
Google	\$ 6,608	\$ 8,708	\$ 11,158
Other Bets	307	327	566
Reconciling items ⁽³⁾	0	0	57
Total depreciation, amortization, and impairment	<u>\$ 6,915</u>	<u>\$ 9,035</u>	<u>\$ 11,781</u>

⁽³⁾ Reconciling items relate to corporate administrative and other costs that are not allocated to individual segments.

⁽⁴⁾ For purposes of segment reporting, SBC represents awards that we expect to settle in Alphabet stock.

The following table presents our long-lived assets by geographic area (in millions):

	As of December 31, 2018	As of December 31, 2019
Long-lived assets:		
United States	\$ 74,882	\$ 94,907
International	22,234	28,424
Total long-lived assets	<u>\$ 97,116</u>	<u>\$ 123,331</u>

For revenues by geography, see Note 2.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer and chief financial officer, evaluated the effectiveness of our disclosure controls and procedures pursuant to Rule 13a-15 under the Exchange Act, as of the end of the period covered by this Annual Report on Form 10-K.

Based on this evaluation, our chief executive officer and chief financial officer concluded that, as of December 31, 2019, our disclosure controls and procedures are designed at a reasonable assurance level and are effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our chief executive officer and chief financial officer, as appropriate, to allow timely decisions regarding required disclosure.

Changes in Internal Control over Financial Reporting

We rely extensively on information systems to manage our business and summarize and report operating results. In 2019, we began a multi-year implementation of a new global enterprise resource planning ("ERP") system, which will replace much of our existing core financial systems. The ERP system is designed to accurately maintain the Company's financial records, enhance the flow of financial information, improve data management and provide timely information to the Company's management team. The implementation is expected to occur in phases over the next several years, with initial changes to our general ledger and consolidated financial reporting to take place in 2020. There have been no changes in our internal control over financial reporting during the quarter ended December 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. However, as the phased implementation of the new ERP system continues, we will change our processes and procedures which, in turn, could result in changes to our internal control over financial reporting. As such changes occur, we will evaluate quarterly whether such changes materially affect our internal control over financial reporting.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rule 13a-15(f) of the Exchange Act. Our management conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on this evaluation, management concluded that our internal control over financial reporting was effective as of December 31, 2019. Management reviewed the results of its assessment with our Audit Committee. The effectiveness of our internal control over financial reporting as of December 31, 2019 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in its report which is included in Item 8 of this Annual Report on Form 10-K.

Limitations on Effectiveness of Controls and Procedures

In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this item will be included under the caption “Directors, Executive Officers, and Corporate Governance” in our Proxy Statement for 2020 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the fiscal year ended December 31, 2019 (2020 Proxy Statement) and is incorporated herein by reference.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item will be included under the captions “Director Compensation,” “Executive Compensation” and “Directors, Executive Officers, and Corporate Governance—Corporate Governance and Board Matters—Compensation Committee Interlocks and Insider Participation” in the 2020 Proxy Statement and is incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this item will be included under the captions “Common Stock Ownership of Certain Beneficial Owners and Management” and “Equity Compensation Plan Information” in the 2020 Proxy Statement and is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this item will be included under the captions “Certain Relationships and Related Transactions” and “Directors, Executive Officers, and Corporate Governance—Corporate Governance and Board Matters—Director Independence” in the 2020 Proxy Statement and is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this item will be included under the caption “Independent Registered Public Accounting Firm” in the 2020 Proxy Statement and is incorporated herein by reference.

PART IV**ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES**

We have filed the following documents as part of this Annual Report on Form 10-K:

1. Consolidated Financial Statements

Reports of Ernst & Young LLP, Independent Registered Public Accounting Firm	47
Financial Statements:	
Consolidated Balance Sheets	50
Consolidated Statements of Income	51
Consolidated Statements of Comprehensive Income	52
Consolidated Statements of Stockholders' Equity	53
Consolidated Statements of Cash Flows	54
Notes to Consolidated Financial Statements	55

2. Financial Statement Schedules**Schedule II: Valuation and Qualifying Accounts**

The table below details the activity of the allowance for doubtful accounts and sales credits for the years ended December 31, 2017, 2018 and 2019 (in millions):

	Balance at Beginning of Year	Additions	Usage	Balance at End of Year
Year ended December 31, 2017	\$ 467	\$ 1,131	\$ (924)	\$ 674
Year ended December 31, 2018	\$ 674	\$ 1,115	\$ (1,060)	\$ 729
Year ended December 31, 2019	\$ 729	\$ 1,481	\$ (1,457)	\$ 753

Note: Additions to the allowance for doubtful accounts are charged to expense. Additions to the allowance for sales credits are charged against revenues.

All other schedules have been omitted because they are not required, not applicable, or the required information is otherwise included.

3. Exhibits

Exhibit Number	Description	Incorporated by reference herein	
		Form	Date
2.01	Agreement and Plan of Merger, dated October 2, 2015, by and among Google Inc., the Registrant and Maple Technologies Inc.	Current Report on Form 8-K (File No. 001-37580)	October 2, 2015
3.01	Amended and Restated Certificate of Incorporation of the Registrant, dated October 2, 2015	Current Report on Form 8-K (File No. 001-37580)	October 2, 2015
3.02	Amended and Restated Bylaws of the Registrant, dated October 2, 2015	Current Report on Form 8-K (File No. 001-37580)	October 2, 2015
4.01	Specimen Class A Common Stock certificate	Current Report on Form 8-K (File No. 001-37580)	October 2, 2015
4.02	Specimen Class C Capital Stock certificate	Current Report on Form 8-K (File No. 001-37580)	October 2, 2015
4.03	Alphabet Inc. Deferred Compensation Plan	Current Report on Form 8-K (File No. 001-37580)	October 2, 2015
4.04	Transfer Restriction Agreement, dated October 2, 2015, between the Registrant and Larry Page and certain of his affiliates	Current Report on Form 8-K (File No. 001-37580)	October 2, 2015

Exhibit Number	Description	Incorporated by reference herein	
		Form	Date
4.05	Transfer Restriction Agreement, dated October 2, 2015, between the Registrant and Sergey Brin and certain of his affiliates	Current Report on Form 8-K (File No. 001-37580)	October 2, 2015
4.06	Transfer Restriction Agreement, dated October 2, 2015, between the Registrant and Eric E. Schmidt and certain of its affiliates	Current Report on Form 8-K (File No. 001-37580)	October 2, 2015
4.07	Class C Undertaking, dated October 2, 2015, executed by the Registrant	Current Report on Form 8-K (File No. 001-37580)	October 2, 2015
4.08	Indenture, dated February 12, 2016, between the Registrant and The Bank of New York Mellon Trust Company, N.A., as Trustee	Registration Statement on Form S-3 (File No. 333-209510)	February 12, 2016
4.09	Registrant Registration Rights Agreement dated December 14, 2015	Registration Statement on Form S-3 (File No. 333-209518)	February 12, 2016
4.10	First Supplemental Indenture, dated April 27, 2016, between the Registrant and The Bank of New York Mellon Trust Company, N.A., as trustee	Current Report on Form 8-K (File No. 001-37580)	April 27, 2016
4.11	Form of the Registrant's 3.625% Notes due 2021 (included in Exhibit 4.10)		
4.12	Form of the Registrant's 3.375% Notes due 2024 (included in Exhibit 4.10)		
4.13	Form of the Registrant's 1.998% Note due 2026	Current Report on Form 8-K (File No. 001-37580)	August 9, 2016
4.14	* Description of Registrant's Securities		
10.01	◆ Form of Indemnification Agreement entered into between the Registrant, its affiliates and its directors and officers	Current Report on Form 8-K (File No. 001-37580)	October 2, 2015
10.02	◆ Letter Agreement, dated April 24, 2019, between Robin L. Washington and Alphabet Inc.	Current Report on Form 8-K (File No. 001-37580)	April 30, 2019
10.03	◆ Letter Agreement, dated December 7, 2019, between Frances H. Arnold and Alphabet Inc.	Current Report on Form 8-K (File No. 001-37580)	December 9, 2019
10.04	◆ Compensation Plan Agreement, dated October 2, 2015, between Google Inc. and the Registrant	Current Report on Form 8-K (File No. 001-37580)	October 2, 2015
10.05	◆ Director Arrangements Agreement, dated October 2, 2015, between Google Inc. and the Registrant	Current Report on Form 8-K (File No. 001-37580)	October 2, 2015
10.06	◆ Alphabet Inc. Deferred Compensation Plan	Current Report on Form 8-K (File No. 001-37580)	October 2, 2015
10.07	◆ Google Inc. 2004 Stock Plan, as amended	Current Report on Form 8-K (File No. 000-50726)	June 7, 2011
10.07.1	◆ Google Inc. 2004 Stock Plan - Form of Google Stock Option Agreement	Annual Report on Form 10-K (File No. 000-50726)	March 30, 2005
10.07.2	◆ Google Inc. 2004 Stock Plan - Form of Google Restricted Stock Unit Agreement	Annual Report on Form 10-K (File No. 000-50726)	March 30, 2005
10.07.3	◆ Google Inc. 2004 Stock Plan - Amendment to Stock Option Agreements	Registration Statement on Form S-3 (File No. 333-142243)	April 20, 2007
10.08	◆ Alphabet Inc. Amended and Restated 2012 Stock Plan	Current Report on Form 8-K (File No. 001-37580)	June 21, 2019

Exhibit Number		Description	Incorporated by reference herein	
			Form	Date
10.08.1	*	◆ Alphabet Inc. Amended and Restated 2012 Stock Plan - Form of Alphabet Restricted Stock Unit Agreement		
10.08.2	*	◆ Alphabet Inc. Amended and Restated 2012 Stock Plan - Performance Stock Unit Agreement		
10.09		◆ Motorola Mobility Holdings, Inc. 2011 Incentive Compensation Plan	Registration Statement on Form S-8 (File No. 333-181661)	May 24, 2012
10.10		◆ Apigee Corporation 2015 Equity Incentive Plan	Registration Statement on Form S-8 (File No. 333-214573)	November 10, 2016
10.10.1		◆ Apigee Corporation 2015 Equity Incentive Plan - Form of Restricted Stock Unit Agreement	Registration Statement on Form S-8 (File No. 333-214573)	November 10, 2016
14.01		Code of Conduct of the Registrant as amended on September 21, 2017	Annual Report on Form 10-K (File No. 001-37580)	February 6, 2018
21.01	*	Subsidiaries of the Registrant		
23.01	*	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm		
24.01	*	Power of Attorney (incorporated by reference to the signature page of this Annual Report on Form 10-K)		
31.01	*	Certification of Chief Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002		
31.02	*	Certification of Chief Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002		
32.01	‡	Certifications of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002		
99.01		EC AdSense for Search Decision	Current Report on Form 8-K (File No. 001-37580)	March 20, 2019
99.02		Press Release regarding Alphabet Management Change	Current Report on Form 8-K (File No. 001-37580)	December 4, 2019
101.INS	*	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.		
101.SCH	*	XBRL Taxonomy Extension Schema Document		
101.CAL	*	XBRL Taxonomy Extension Calculation Linkbase Document		
101.DEF	*	XBRL Taxonomy Extension Definition Linkbase Document		
101.LAB	*	XBRL Taxonomy Extension Label Linkbase Document		

Exhibit Number	Description	Incorporated by reference herein	
		Form	Date
101.PRE	* XBRL Taxonomy Extension Presentation Linkbase Document		
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)		

◆ Indicates management compensatory plan, contract, or arrangement.

* Filed herewith.

‡ Furnished herewith.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: February 3, 2020

ALPHABET INC.

By: /s/ SUNDAR PICHAI
 Sundar Pichai
 Chief Executive Officer
 (Principal Executive Officer of the Registrant)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Sundar Pichai and Ruth M. Porat, jointly and severally, his or her attorney-in-fact, with the power of substitution, for him or her in any and all capacities, to sign any amendments to this Annual Report on Form 10-K and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact, or his or her substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
/s/ SUNDAR PICHAI <hr/> Sundar Pichai	Chief Executive Officer and Director (Principal Executive Officer)	February 3, 2020
/s/ RUTH M. PORAT <hr/> Ruth M. Porat	Senior Vice President and Chief Financial Officer (Principal Financial Officer)	February 3, 2020
/s/ AMIE THUENER O'TOOLE <hr/> Amie Thuener O'Toole	Vice President and Chief Accounting Officer (Principal Accounting Officer)	February 3, 2020
/s/ FRANCES H. ARNOLD <hr/> Frances H. Arnold	Director	February 3, 2020
/s/ SERGEY BRIN <hr/> Sergey Brin	Co-Founder and Director	February 3, 2020
/s/ L. JOHN DOERR <hr/> L. John Doerr	Director	February 3, 2020
/s/ ROGER W. FERGUSON, JR. <hr/> Roger W. Ferguson, Jr.	Director	February 3, 2020
/s/ JOHN L. HENNESSY <hr/> John L. Hennessy	Director, Chair	February 3, 2020
/s/ ANN MATHER <hr/> Ann Mather	Director	February 3, 2020
/s/ ALAN R. MULALLY <hr/> Alan R. Mulally	Director	February 3, 2020
/s/ LARRY PAGE <hr/> Larry Page	Co-Founder and Director	February 3, 2020
/s/ K. RAM SHRIRAM <hr/> K. Ram Shriram	Director	February 3, 2020
/s/ Robin L. Washington <hr/> Robin L. Washington	Director	February 3, 2020

EXHIBIT 4

Removals Appeals Flags Featured policies

YouTube Community Guidelines enforcement

At YouTube, we work hard to maintain a safe and vibrant community. We have Community Guidelines that set the rules of the road for what we don't allow on YouTube. For example, we do not allow pornography, incitement to violence, harassment, or hate speech. We rely on a combination of people and technology to flag inappropriate content and enforce these guidelines. Flags can come from our automated flagging systems, from members of the Trusted Flagger program (NGOs, government agencies, and individuals) or from users in the broader YouTube community. This report provides data on the flags YouTube receives and how we enforce our policies.

Removed videos by the numbers

Oct 2019 – Dec 2019 Include automated flagging

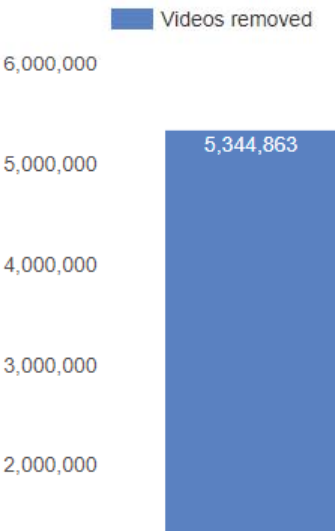
Total videos removed

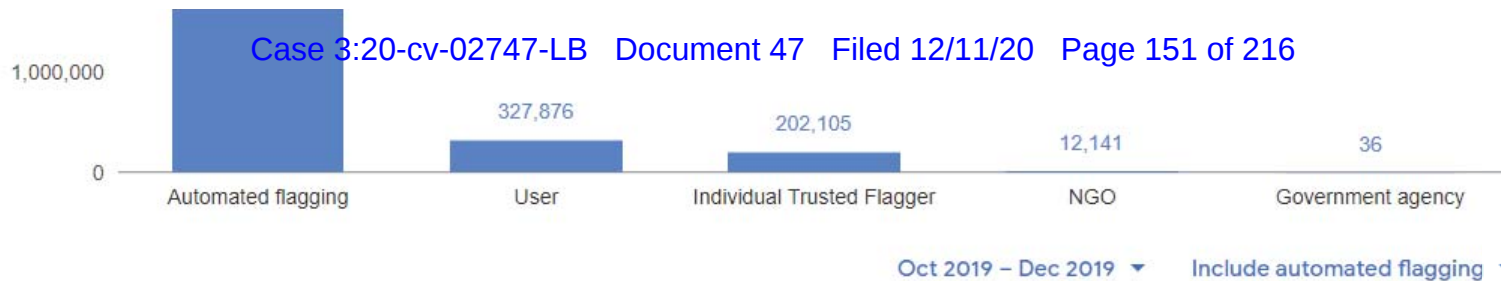
5,887,021

YouTube relies on teams around the world to review flagged videos and remove content that violates our terms of service; restrict videos (e.g., age-restrict content that may not be appropriate for all audiences); or leave the content live when it doesn't violate our guidelines.

This exhibit shows the number of videos removed by YouTube for violating its Community Guidelines per quarter.

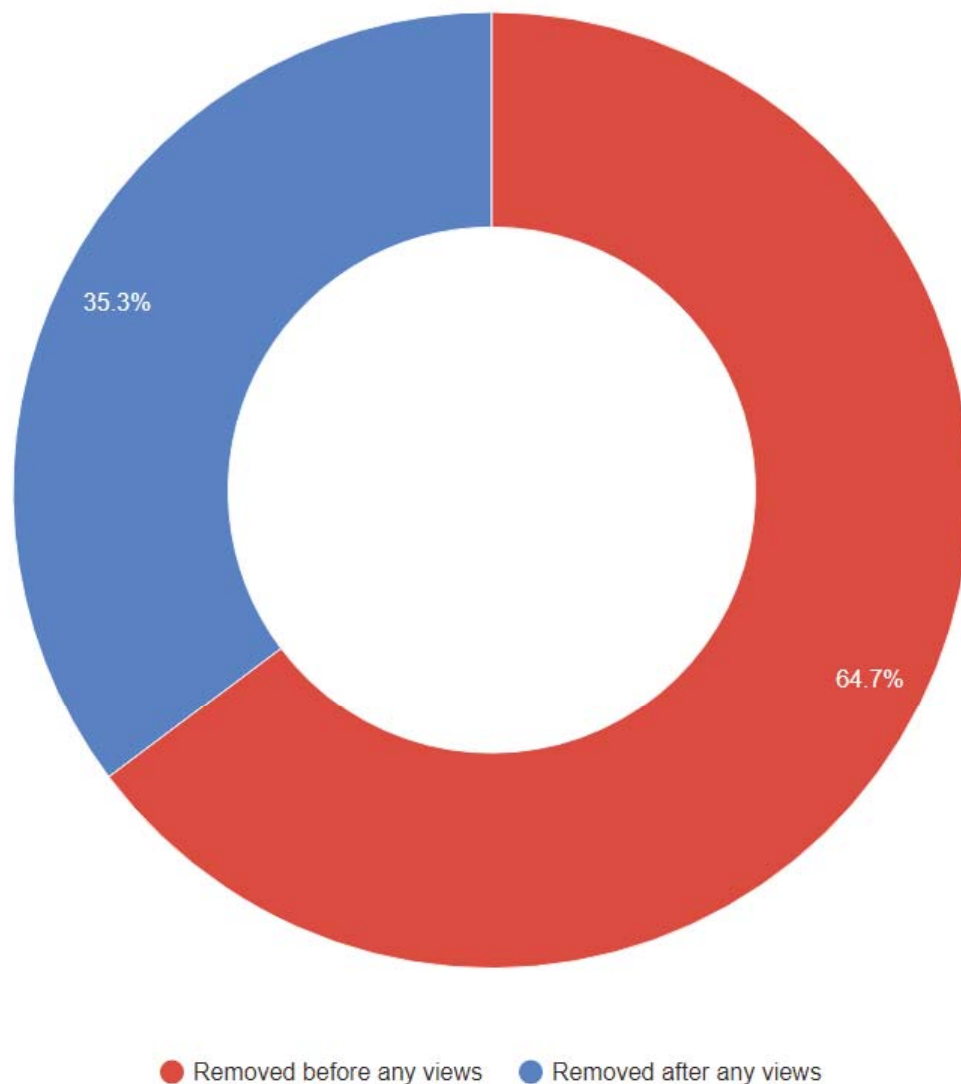
Videos removed, by source of first detection





This chart shows the volume of videos removed by YouTube, by source of first detection (automated flagging or human detection). Flags from human detection can come from a user or a member of YouTube's [Trusted Flagger](#) program. Trusted Flagger program members include individuals, NGOs, and government agencies that are particularly effective at notifying YouTube of content that violates our Community Guidelines.

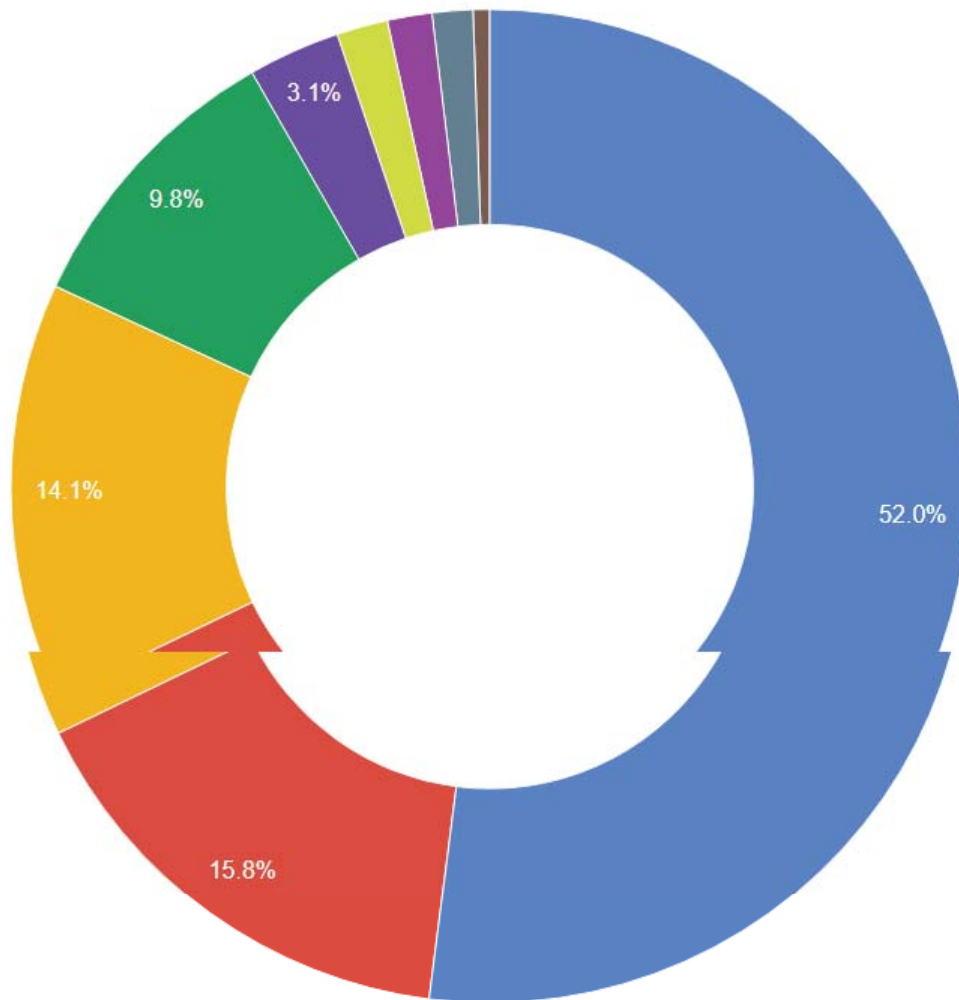
Removed videos first flagged through automated flagging, with and without views



Oct 2019 – Dec 2019 ▼

Automated flagging enables us to act more quickly and accurately to enforce our policies. This chart shows the percentage of video removals (first flagged through our automated flagging systems) that occurred before they received any views versus those that occurred after receiving some views.

Videos removed, by removal reason



● Spam, misleading and scams
● Child safety
● Nudity or sexual
● Violent or graphic
● Harmful or dangerous

◀ 1/2 ▶

Oct 2019 – Dec 2019 ▼

This chart shows the volume of videos removed by YouTube, by the reason a video was removed. These removal reasons correspond to YouTube's [Community Guidelines](#). Reviewers evaluate flagged videos against all of our Community Guidelines and policies, regardless of the reason the video

Videos removed, by country/region

This chart shows the number of videos removed by YouTube, by the country/region of upload. This data is based on the uploader's IP address at the time the video was uploaded. The IP address usually corresponds with where an uploader is geolocated, unless they are using a virtual private network (VPN) or proxy server.

YouTube's Community Guidelines are enforced consistently across the globe, regardless of where the content is uploaded. When content is removed for violating our guidelines, it is removed globally. For information about content removals or restrictions based on local laws, see Google's [Government requests to remove content transparency report](#).

Oct 2019 – Dec 2019 ▾ All countries/regions ▾

Rank	Country/region*	Videos Removed
1	United States	1,100,337
1	United States	1,100,337
2	Netherlands	793,347
3	India	757,130
4	Indonesia	518,373
5	Brazil	331,406
6	Russia	282,721
7	Vietnam	110,923
8	Pakistan	102,943
9	Mexico	98,887
10	Turkey	93,575

< Previous 1 of 3 Next >

* Country/region is based on IP address at time of video upload

Removed channels by the numbers

Oct 2019 – Dec 2019 ▾

Total channels removed

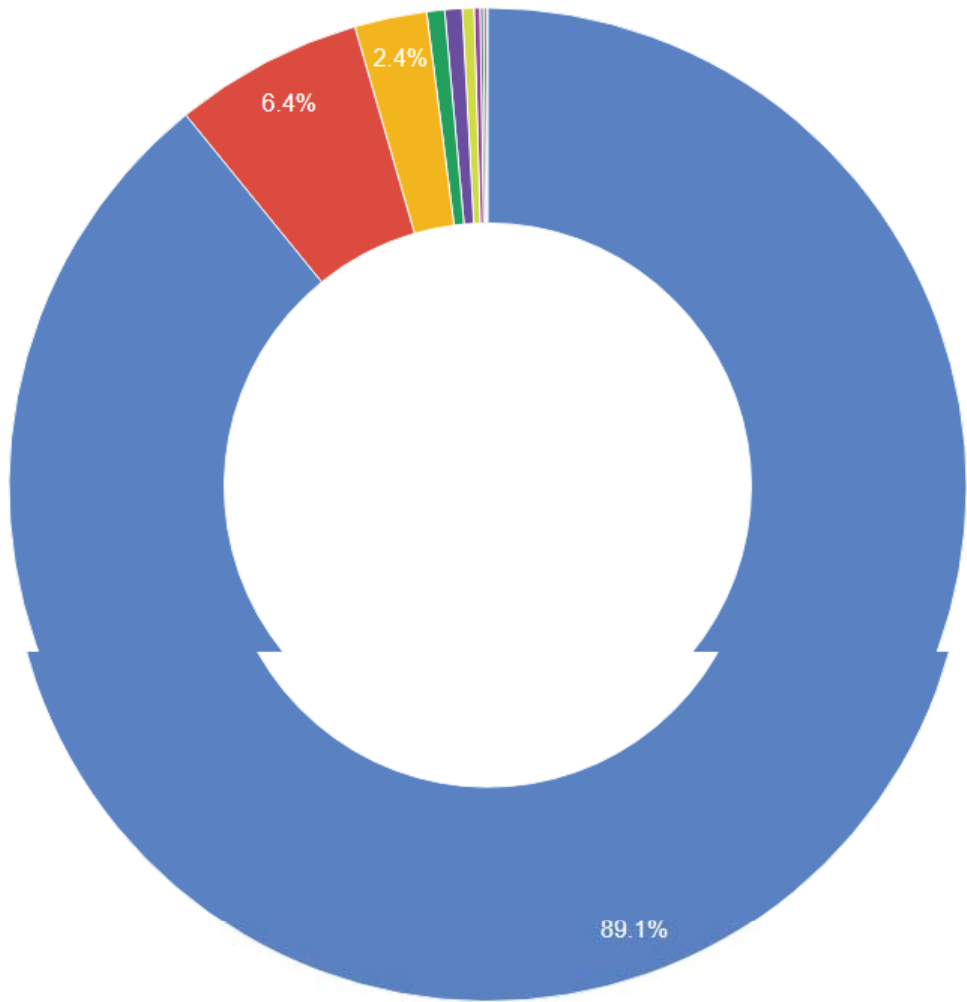
2,088,253

When a channel is terminated, all of its videos are removed.
Number of videos removed during this time period due to a channel-level suspension: 50,445,644

A YouTube channel is terminated if it accrues three Community Guidelines strikes in 90 days, has a single case of severe abuse (such as predatory behavior), or is determined to be wholly dedicated to violating our guidelines (as is often the case with spam accounts). When a channel is terminated, all of its videos are removed.

This exhibit shows the number of channels removed by YouTube for violating its Community Guidelines per quarter.

Channels removed, by removal reason



Spam, misleading and scams Nudity or sexual Child safety Harassment and cyberbullying

◀ 1/3 ▶

Oct 2019 – Dec 2019 ▼

This chart shows the volume of channels removed by YouTube, by the reason a channel was removed. The majority of channel terminations are a result of accounts being dedicated to spam or adult sexual content in violation of our guidelines.

Removed comments by the numbers

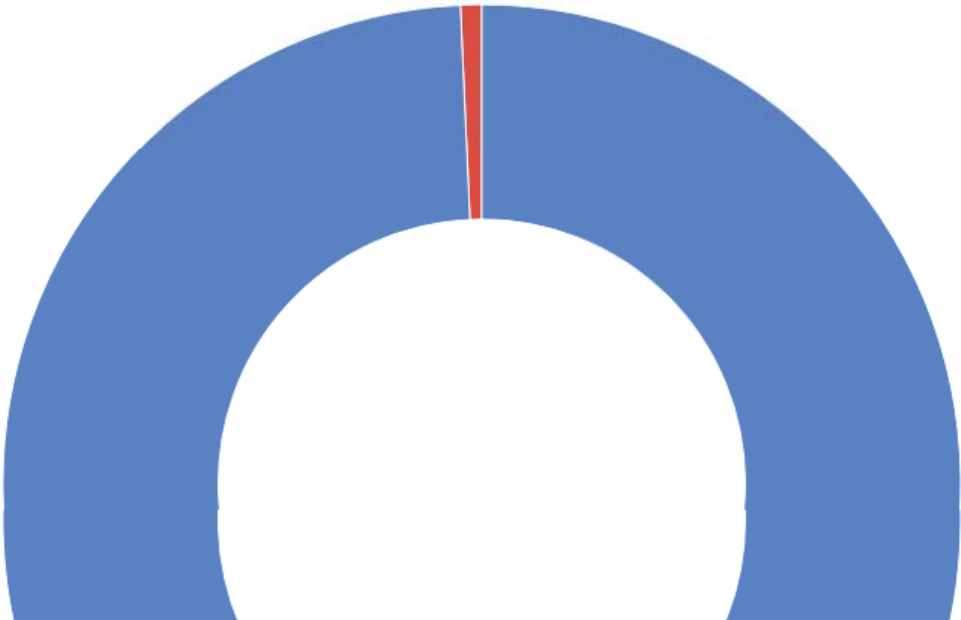


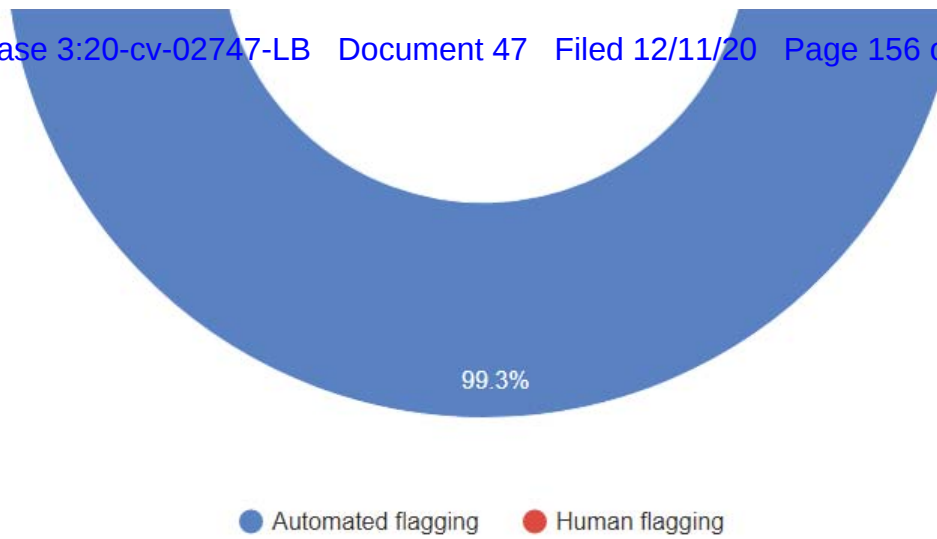
YouTube is a vibrant community in which millions of people post billions of comments each quarter. Using a combination of people and technology, we remove comments that violate our [Community Guidelines](#). We also filter comments which we have high confidence are spam into a 'Likely spam' folder that creators can review and approve if they choose.

This exhibit shows the volume of comments removed by YouTube for violating our [Community Guidelines](#) and filtered as likely spam which creators did not approve.

The data does not include comments removed when YouTube disables the comment section on a video. It also does not include comments taken down when a video itself is removed (individually or through a channel-level suspension), when a commenter's account is terminated, or when a user chooses to remove certain comments or hold them for review.

Comments removed, by source of first detection



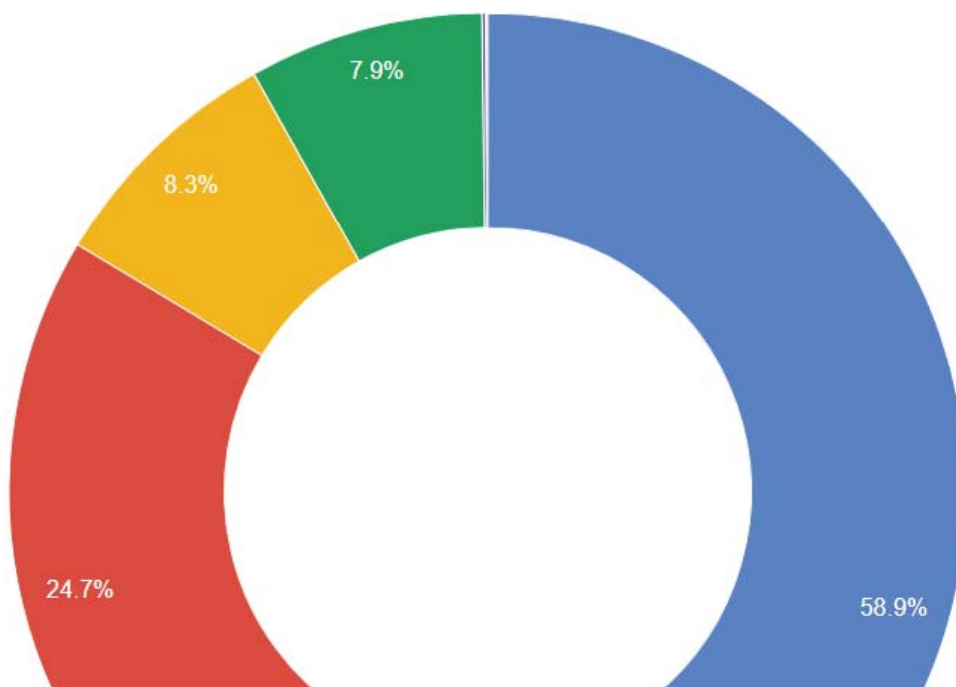


Oct 2019 – Dec 2019 ▼

Most removed comments are detected by our automated flagging systems but they can also be flagged by human flaggers. We rely on teams around the world to review flagged comments and remove content that violates our Terms of Service, or leave the content live when it doesn't violate our guidelines.

This chart shows the volume of comments removed by YouTube for violating our [Community Guidelines](#), by source of first detection (automated flagging or human detection). The majority of actions we take on comments is for violating our guidelines against spam.

Comments removed, by removal reason



● Spam, misleading and scams
● Hateful or abusive
● Harassment and cyberbullying
● Child safety

◀ 1/2 ▶

Oct 2019 – Dec 2019 ▼

This chart shows the number of comments removed by YouTube, by the reason a comment was removed. These removal reasons correspond to YouTube's [Community Guidelines](#). The majority of actions that we take on comments is for violating our guidelines against spam.

YouTube Community Guidelines enforcement

YouTube is a community and, over the years, people have used the flagging feature located beneath every video and comment to help report content they believe violates our Community Guidelines. We want to empower the YouTube community to understand how flagging works and to get involved in maintaining our Community Guidelines.

[Flagging matters. Learn why.](#) ↗

Share  

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Transparency
Report

Home

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FAQ

Security and
privacy

Requests for user
information

Safe Browsing: malware
and phishing

Email encryption

Content removal

Content delistings due
to copyright

Government requests to
remove content

Requests to delist
content under European

Additional reports

Political advertising on
Google

Traffic and disruptions
to Google

they believe violates our Community Guidelines. We want to empower the YouTube community to understand how flagging works and to get involved in maintaining our Community Guidelines.

[Flagging matters. Learn why.](#) ↗

Share



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Transparency Report

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Security and privacy

[Requests for user information](#)[Safe Browsing: malware and phishing](#)[Email encryption in transit](#)[HTTPS encryption on the web](#)[Android ecosystem security](#)

Content removal

[Content delistings due to copyright](#)[Government requests to remove content](#)[Requests to delist content under European privacy law](#)[YouTube Community Guidelines enforcement](#)[Removals under the Network Enforcement Law](#)

Additional reports

[Political advertising on Google](#)[Traffic and disruptions to Google](#)[Help](#)[Privacy](#)[About Google](#)[Send feedback](#)[English](#)

Document title: YouTube Community Guidelines enforcement – Google Transparency Report

Capture URL: <https://transparencyreport.google.com/youtube-policy/removals>

Captured site IP: 172.217.7.206

Page loaded at (UTC): Tue, 10 Mar 2020 14:39:47 GMT

Capture timestamp (UTC): Tue, 10 Mar 2020 14:40:34 GMT

Capture tool: v6.13.15

Collection server IP: 52.5.8.50

Browser engine: Chrome/70.0.3538.77

Operating system: Microsoft Windows NT 10.0.14393.0 (10.0.14393.0)

PDF length: 10

Capture ID: d5e1908c-28a6-4dd9-a69e-8f7faccb88da

User: pagevault-steve

EXHIBIT 5



Official Blog

More information, faster removals, more people - an update on what we're doing to enforce YouTube's Community Guidelines

Monday, April 23, 2018

In [December](#) we shared how we're expanding our work to remove content that violates our policies. Today, we're providing an update and giving you additional insight into our work, including the release of the first YouTube Community Guidelines Enforcement Report.

Providing More Information

We are taking an important first step by releasing a [quarterly report](#) on how we're enforcing our [Community Guidelines](#). This regular update will help show the progress we're making in removing violative content from our platform. By the end of the year, we plan to refine our reporting systems and add additional data, including data on comments, speed of removal, and policy removal reasons.

We're also introducing a [Reporting History dashboard](#) that each YouTube user can individually access to see the status of videos they've flagged to us for review against our Community Guidelines.

Machines Helping to Address Violative Content

Machines are allowing us to flag content for review at scale, helping us remove millions of violative videos before they are ever viewed. And our investment in machine learning to help speed up removals is paying off across high-risk, low-volume areas (like violent extremism) and in high-volume areas (like spam).

Highlights from the report -- reflecting data from October - December 2017 -- show:

- We **removed over 8 million videos** from YouTube during these months.¹
The majority of these 8 million videos were mostly spam or people attempting to upload adult content - and represent a fraction of a percent of YouTube's total views during this time period.²
- **6.7 million were first flagged for review by machines** rather than humans
- Of those 6.7 million videos, **76 percent were removed before they received a single view**.

For example, at the beginning of 2017, 8 percent of the videos flagged and removed for violent extremism were taken down with fewer than 10 views.³ We introduced machine learning flagging in June 2017. Now more than half of the videos we remove for violent extremism have fewer than 10 views.

% of videos taken down for Violent Extremism - by views at takedown



29M

Labels

Archive

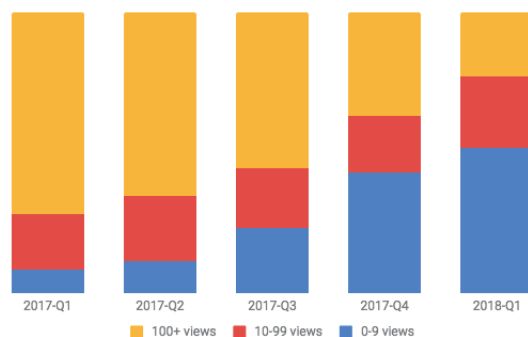
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% of videos taken down for Violent Extremism - by views at takedown



The Value of People + Machines

Deploying machine learning actually means more people reviewing content, not fewer. Our systems rely on human review to assess whether content violates our policies. You can learn more about our flagging and human review process in this video:



Last year we committed to bringing the total number of people working to address violative content to 10,000 across Google by the end of 2018. At YouTube, we've staffed the majority of additional roles needed to reach our contribution to meeting that goal. We've also hired full-time specialists with expertise in violent extremism, counterterrorism, and human rights, and we've expanded regional expert teams.

We continue to invest in the network of over 150 academics, government partners, and NGOs who bring valuable expertise to our enforcement systems, like the [International Center for the Study of Radicalization at King's College London](#), [Anti-Defamation League](#), and [Family Online Safety Institute](#). This includes adding more child safety focused partners from around the globe, like [Childline South Africa](#), [ECPAT Indonesia](#), and [South Korea's Parents' Union on Net](#).

We are committed to making sure that YouTube remains a vibrant community with strong systems to remove violative content and we look forward to providing you with more information on how those systems are performing and improving over time.

-- The YouTube Team

¹ This number does not include videos that were removed when an entire channel was removed. Most channel-level removals are due to spam violations and we believe that the percentage of violative content for spam is even higher.

² Not only do these 8 million videos represent a fraction of a percent of YouTube's overall views, but that fraction of a percent has been steadily decreasing over the last five quarters.

³ This excludes videos that were automatically matched as known violent extremist content at point of upload - which would all have zero views.



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Document title:	Official YouTube Blog: More information, faster removals, more people - an update on what we're doing to enforce YouTube's Community Guidelines
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User:	pagevault-jordan

EXHIBIT 6



Official Blog

Expanding our work against abuse of our platform

Monday, December 4, 2017

As the CEO of YouTube, I've seen how our open platform has been a force for creativity, learning and access to information. I've seen how activists have used it to advocate for social change, mobilize protests, and document war crimes. I've seen how it serves as both an entertainment destination and a video library for the world. I've seen how it has expanded economic opportunity, allowing small businesses to market and sell their goods across borders. And I've seen how it has helped enlighten my children, giving them a bigger, broader understanding of our world and the billions who inhabit it.

But I've also seen up-close that there can be another, more troubling, side of YouTube's openness. I've seen how some bad actors are exploiting our openness to mislead, manipulate, harass or even harm.

In the last year, we took actions to protect our community against violent or extremist content, testing new systems to combat emerging and evolving threats. We tightened our policies on what content can appear on our platform, or earn revenue for creators. We increased our enforcement teams. And we invested in powerful new machine learning technology to scale the efforts of our human moderators to take down videos and comments that violate our policies.

Now, we are applying the lessons we've learned from our work fighting violent extremism content over the last year in order to tackle other problematic content. Our goal is to stay one step ahead of bad actors, making it harder for policy-violating content to surface or remain on YouTube.

More people reviewing more content

Human reviewers remain essential to both removing content and training machine learning systems because human judgment is critical to making contextualized

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More people reviewing more content

Human reviewers remain essential to both removing content and training machine learning systems because human judgment is critical to making contextualized decisions on content. Since June, our trust and safety teams have manually reviewed nearly 2 million videos for violent extremist content, helping train our machine-learning technology to identify similar videos in the future. We are also taking aggressive action on comments, launching new comment moderation tools and in some cases shutting down comments altogether. In the last few weeks we've used machine learning to help human reviewers find and terminate hundreds of accounts and shut down hundreds of thousands of comments. Our teams also work closely with NCMEC, the IWF, and other child safety organizations around the world to report predatory behavior and accounts to the correct law enforcement agencies.

We will continue the significant growth of our teams into next year, with the goal of bringing the total number of people across Google working to address content that might violate our policies to over 10,000 in 2018.

At the same time, we are expanding the network of academics, industry groups and subject matter experts who we can learn from and support to help us better understand emerging issues.

Tackling issues at scale

We will use our cutting-edge machine learning more widely to allow us to quickly and efficiently remove content that violates our guidelines. In June we deployed this technology to flag violent extremist content for human review and we've seen tremendous progress.

- Since June we have removed over 150,000 videos for violent extremism.
- Machine learning is helping our human reviewers remove nearly five times as many videos than they were previously.
- Today, 98 percent of the videos we remove for violent extremism are flagged by our machine-learning algorithms.
- Our advances in machine learning let us now take down nearly 70 percent of violent extremist content within eight hours of upload and nearly half of it in two hours and we continue to accelerate that speed.
- Since we started using machine learning to flag violent and extremist content in June, the technology has reviewed and flagged content that

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- Since we started using machine learning to flag violent and extremist content in June, the technology has reviewed and flagged content that would have taken 180,000 people working 40 hours a week to assess.

Because we have seen these positive results, we have begun training machine-learning technology across other challenging content areas, including [child safety](#) and hate speech.

Greater transparency

We understand that people want a clearer view of how we're tackling problematic content. Our [Community Guidelines](#) give users notice about what we do not allow on our platforms and we want to share more information about how these are enforced. That's why in 2018 we will be creating a regular report where we will provide more aggregate data about the flags we receive and the actions we take to remove videos and comments that violate our content policies. We are looking into developing additional tools to help bring even more transparency around flagged content.

A new approach to advertising on YouTube

We're also taking actions to protect advertisers and creators from inappropriate content. We want advertisers to have peace of mind that their ads are running alongside content that reflects their brand's values. Equally, we want to give creators confidence that their revenue won't be hurt by the actions of bad actors.

We believe this requires a new approach to advertising on YouTube, carefully considering which channels and videos are eligible for advertising. We are planning to apply stricter criteria, conduct more manual curation, while also significantly ramping up our team of ad reviewers to ensure ads are only running where they should. This will also help vetted creators see more stability around their revenue. It's important we get this right for both advertisers and creators, and over the next few weeks, we'll be speaking with both to hone this approach.

We are taking these actions because it's the right thing to do. Creators make incredible content that builds global fan bases. Fans come to YouTube to watch, share, and engage with this content. Advertisers, who want to reach those people, fund this creator economy. Each of these groups is essential to YouTube's creative ecosystem—none can thrive on YouTube without the other—and all three deserve our best efforts.

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As challenges to our platform evolve and change, our enforcement methods must and will evolve to respond to them. But no matter what challenges emerge, our commitment to combat them will be sustained and unwavering. We will take the steps necessary to protect our community and ensure that YouTube continues to be a place where creators, advertisers, and viewers can thrive.

Susan Wojcicki, CEO of YouTube



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Document title:	Official YouTube Blog: Expanding our work against abuse of our platform
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EXHIBIT 7

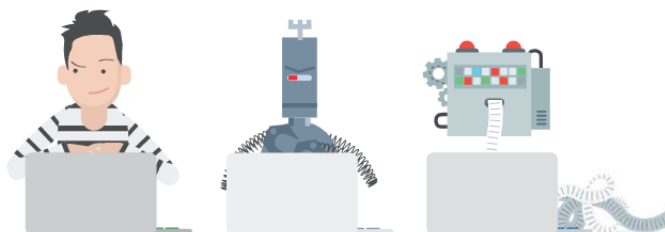
We protect you from invalid activity and advertising fraud



We work hard to get you real results from advertising.

Advertisers, agencies, and publishers (including app developers and YouTube creators) all rely on advertising to help them reach new customers, grow their businesses, and earn a living. With so much at stake, it's important that the system works right. That's why we've developed powerful processes and invested in technology and an entire team of experts, to protect our customers and remove invalid activity and advertising fraud from our systems.

What is invalid activity?



In a nutshell, it's any interaction that doesn't come from real people with real interest in an ad. Some invalid traffic is accidental, like when a badly placed ad gets in the way of something the user is trying to click. Some is deliberate, like botnets or other advertisers who click on ads to waste their competitors' budgets.

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How does Google stop invalid activity?

How does Google stop invalid activity?



We use live reviewers, automatic filters, machine learning, and deep research to block as much invalid and fraudulent activity as possible.

Our global team of over a hundred PhDs, data scientists, engineers, and researchers constantly monitors and analyzes traffic to prevent advertisers from paying for invalid clicks, impressions, views, or interactions, and stops publishers from generating invalid activity from receiving undeserved advertising income.

Our **automated detection** systems use machine learning and complex algorithms to protect our partners and keep our ad platforms clean.

We **manually review** suspected cases of invalid activity that weren't stopped by our automated systems. Whenever we find unusual traffic, or an advertiser or publisher raises a valid concern, our team investigates the data and makes a decision or creates a new filter.

Our team uses **advanced research** to uncover sources of non-human traffic and develop solutions to keep them from entering our networks and platforms.

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How can you prevent invalid activity?



We work hard to protect you from invalid activity and advertising fraud, but there are things you can do to help. The first step is to learn how to monitor the performance of your ads and content. Next, you can take action to avoid creating invalid activity on



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We work hard to protect you from invalid activity and advertising fraud, but there are things you can do to help. The first step is to learn how to monitor the performance of your ads and content. Next, you can take action to avoid creating invalid activity on your account and prevent people from taking advantage of you.

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Document title: Google Ad Traffic Quality

Capture URL: <https://www.google.com/ads/adtrafficquality/>

Captured site IP: 172.217.7.228

Page loaded at (UTC): Fri, 06 Mar 2020 16:00:09 GMT

Capture timestamp (UTC): Fri, 06 Mar 2020 16:00:21 GMT

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Capture ID: fc2f83da-7f2f-406f-84a4-5da80947518f

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EXHIBIT 8

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A YouTuber With 350,000 Subscribers Was Hacked, YouTube Verified His Hacker



Paul Tassi Senior Contributor
Games

News and opinion about video games, television, movies and the internet.



Brad Garlinghouse

355K subscribers

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This channel doesn't have any content yet.

MarcoStyle's hijacked YouTube page, with a verified hacker

My first interaction with MarcoStyle was him telling me I was wrong. I don't remember *what* about Ubisoft's *The Division* we were arguing about specifically, but I heard my name come up in his YouTube video about how I had the wrong take on some issue or another in a recent article. Probably the Dark Zone, if I had to guess.

Three years later, the now 24 year-old Marco has grown his gaming channel substantially. Still probably best known for his *Division* content, he's also branched into *Destiny* as of late, and his YouTube channel has swelled to 350,000 subscribers.

And he almost lost it all in an instant.

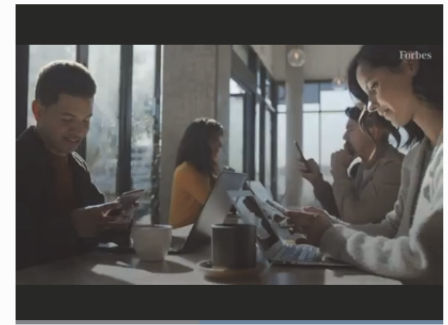
Marco watched everything he'd built burn starting on November 2 when he replied to an email looking to advertise on his channel. It seemed like a real company and a standard offer for a channel of his size, but when he clicked a link for the product, an installer buried itself on his computer.

He immediately knew what was happening. He cut power to his PC, did a fresh Windows install and changed all his login info. But it was already too late.

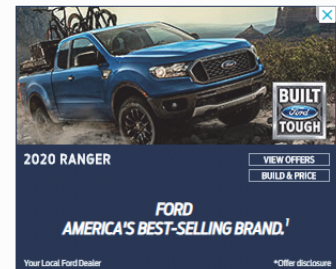
The hacker got into his computer, got into his Google account bypassing two-factor authentication and extracted his YouTube account from his Gmail. He also lost his Twitch, but was able to regain control of it manually fairly quickly.

Today In: Games

As soon as Marco lost control of his channel, he contacted YouTube,



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Today In: Games

As soon as Marco lost control of his channel, he contacted YouTube, who did reply that day at least acknowledging the issue. But at that point, the hacker was still in constant motion.

Marco's channel was sold on a Russian website for hacked YouTube channels, which is a thing that exists in 2019. All his videos were taken down. His profile was changed to read "Brad Garlinghouse," with the name and picture of the real-life CEO of fintech company Ripple.

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Operational Agility In The Digital Age: A Three-Part Framework

Five days later, YouTube still had not blocked the hacker's access or let Marco know what was happening, and on November 7, the hacker started running a livestream meant to scam viewers out of money. By the time the stream was over, it reportedly stole about \$15,000 from viewer's Ripple wallets, and it turns out this "Brad Garlinghouse" takeover of larger channels is actually a fairly frequent occurrence. That scam stream was now the only video on Marco's entire channel, which had been torn away from him completely.

2:10

77%



brad garlinghouse



Brad Garlinghouse

184K subscribers · 17 videos

SUBSCRIBE



Brad Garlinghouse

15.1K subscribers · 12 videos

SUBSCRIBE



Brad Garlinghouse

165K subscribers · 28 videos

SUBSCRIBE



Brad Garlinghouse

97.9K subscribers

SUBSCRIBE



Brad Garlinghouse

259K subscribers · 32 videos

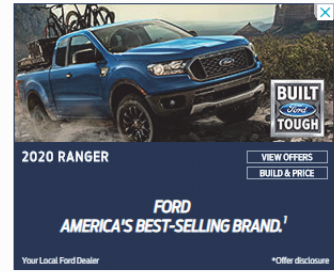
SUBSCRIBE



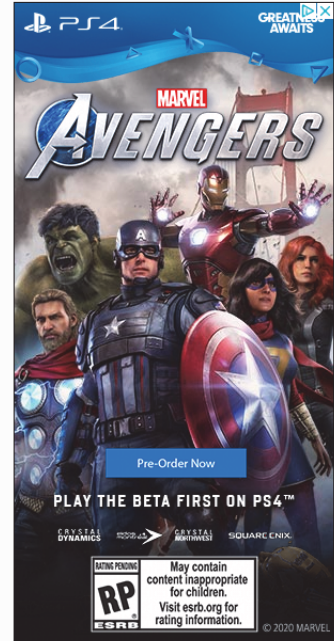
Brad Garlinghouse

2.78K subscribers · 75 videos

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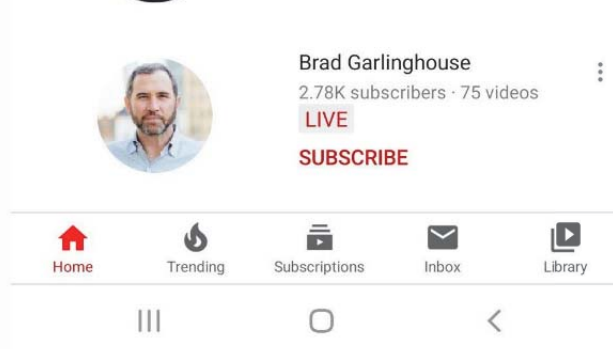


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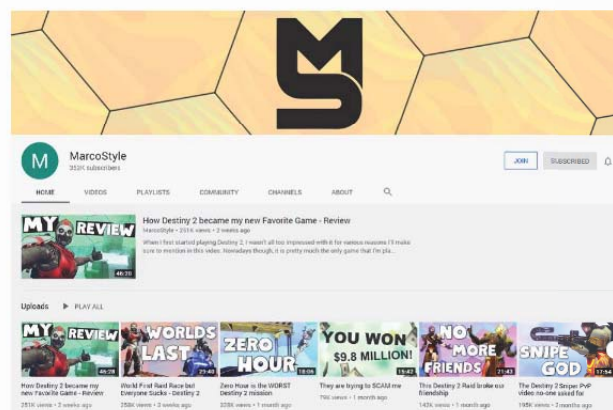




Other "Brad Garlinghouses" that have seemingly taken over existing channels. [YOUTUBE](#)

"I know that I'm not on the top of the list when it comes to channel size," Marco told me, "so I accepted that it would probably take more time for things to get sorted. But when there was a scam going on, on my channel that did not get taken down for 24 hours, I got pretty stressed out. 'What if my viewers think it's me and get scammed?' 'What if those viewers go to the police and report that a channel called 'marcostyle' scammed them?' 'How can YouTube remove videos far quicker for far less, while an illegal scam with 1000s of reports is allowed to stay up?' "

The hack and scam wasn't even the strangest part of the entire ordeal. Rather, the most baffling moment came when "Brad Garlinghouse," the clearly fake identity of a clearly hacked YouTube channel, actually managed to earn a verification badge from YouTube, something Marco had attempted to get for ages, but never was given.



Marco's actual channel [YOUTUBE](#)

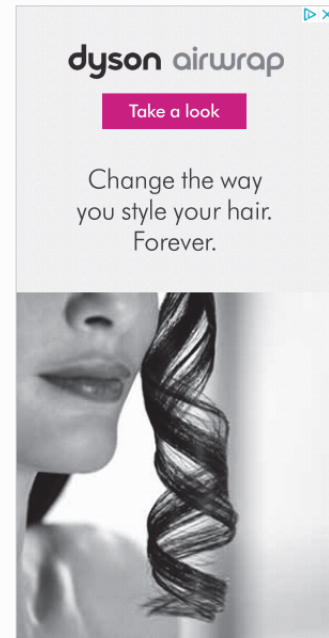
Marco documented the entire unfolding saga on Twitter where it attracted the attention of fellow YouTubers of various sizes from Gladd to Datto to Keemstar. Eventually, it caught the eye of Ryan "Fwiz" Wyatt, Global Head of Gaming at YouTube, and an actual end finally started to feel like it was forthcoming on November 9 with YouTube getting back in touch and appearing to prioritize a fix. It took until yesterday, November 13, for MarcoStyle to get control of his channel again and see his videos restored, 11 days after the hack had started. It's not clear how long it might have taken if Marco had a smaller channel or if others hadn't started making noise about it on social media. But it was nearly an utter catastrophe for a content creator where everything he'd spent years building could seemingly be wiped out from one simple click.

"I've thought a lot about how my YouTube career could come to an end at one point," Marco said. "Maybe the game I'd play simply wouldn't have a big enough audience, maybe I'd grow bored of it, or maybe at one

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"I've thought a lot about how my YouTube career could come to an end at one point," Marco said. "Maybe the game I'd play simply wouldn't have a big enough audience, maybe I'd grow bored of it, or maybe at one point I just fall off because the type of content I make doesn't get pushed through YouTube, and in those cases, I'd sort of be fine with it, because then at least I tried and ended up not being good enough. But to go down like this, where I was about to do better than ever before with my Destiny 2 content and about to blow up (at least I thought so, I could be wrong) and then have my channel get hacked and destroyed, that is just infuriating."

Marco is certainly not the first YouTuber to get hacked, but it was a higher profile case and one that still took a substantial amount of time to be resolved, considering how quickly YouTube often takes action on other channels for various offenses. To get its side of the story, I first spoke with Ryan Wyatt, who referred me to YouTube PR, and I sent them a laundry list of questions regarding how to better protect accounts and report hijackings, but also about why this wasn't flagged when the hacker was carving through the channel, why it took so long to regain control of and fix the account, and how on earth the hacker managed to actually get *verified* as all this was happening.

YouTube sent me back only the following statement the day Marco's channel was restored:

"We take account security very seriously and regularly notify users when we detect suspicious activity. We encourage users to enable two-factor authentication as part of Google's account Security Checkup, which decreases the risk of hacking. If a user has reason to believe their account was compromised, they can notify our team to secure the account and regain control."

This is, in fact, word for word identical to a statement they sent to Forbes over a month ago for a different story we wrote about an increased rise in "spear phishing" attacks, similar to the one that affected Marco. It is par for the course for YouTube which operates in a black box most of the time. Cryptic answers, if any, with most of the responsibility directed at the user, not the platform that should be helping to protect them.

Marco did get his account back, that's a happy ending at least. He's relieved and is just happy the ordeal is over, as he expressed in a recent "comeback" video posted to his channel.

He lost the hacker's verified badge.

Follow me on Twitter, Facebook and Instagram. Pre-order my new sci-fi novel *Herokiller*, and read my first series, *The Earthborn Trilogy*, which is also on audiobook.



Paul Tassi

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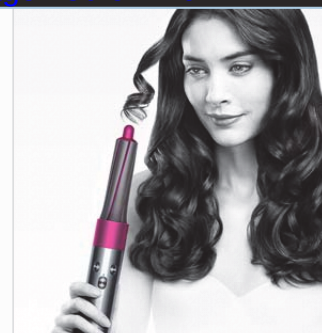
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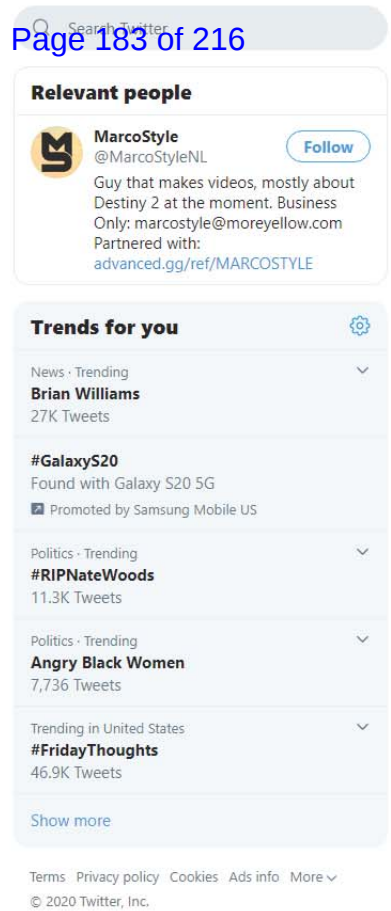
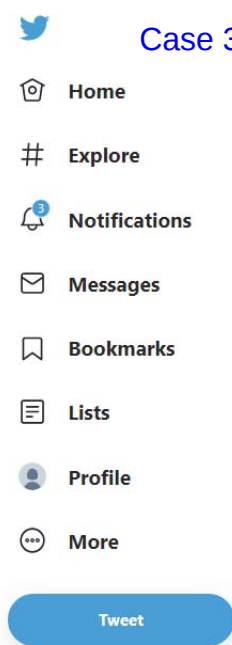
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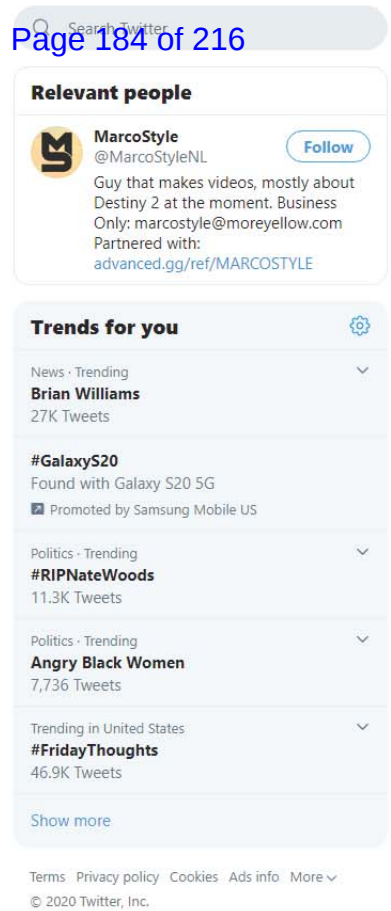
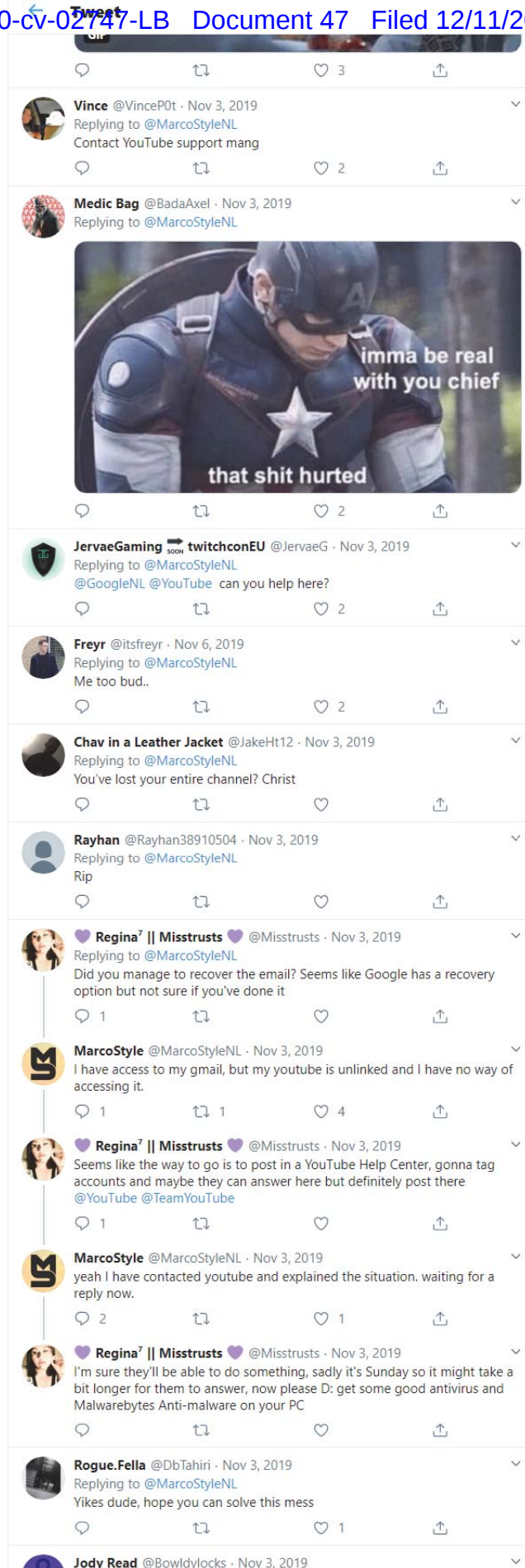
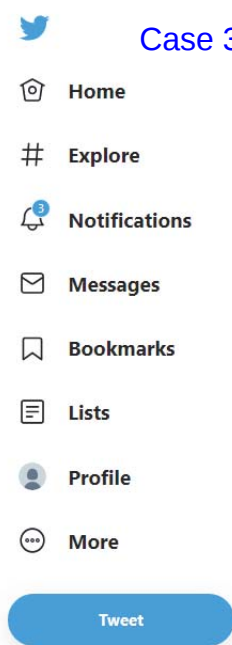
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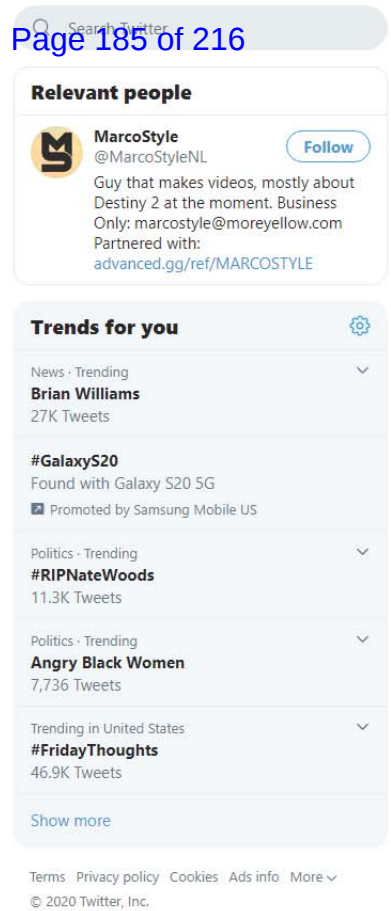
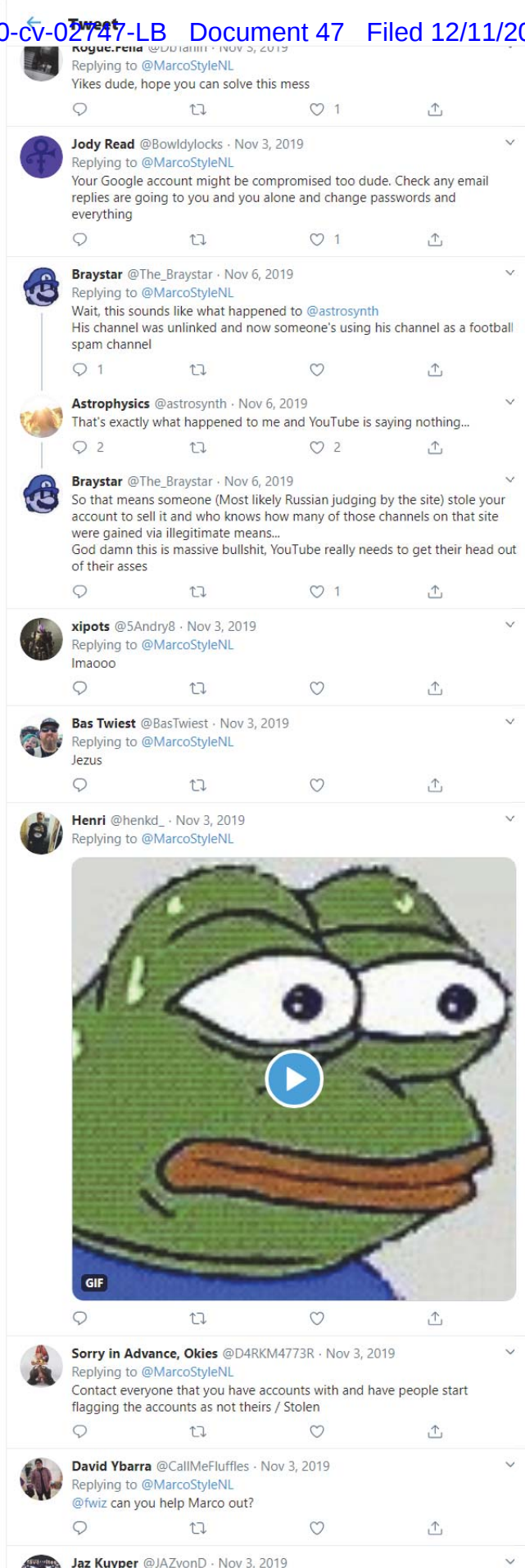
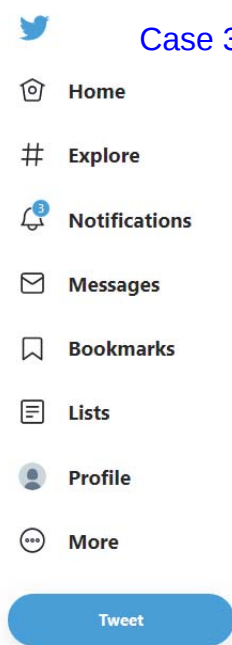
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Capture URL:	https://www.forbes.com/sites/paultassi/2019/11/14/a-youtuber-with-350000-subscribers-was-hacked-youtube-verified-his-hacker/#49a400116fe6
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Page loaded at (UTC):	Fri, 06 Mar 2020 16:01:31 GMT
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Capture tool:	v6.13.15
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Operating system:	Microsoft Windows NT 10.0.14393.0 (10.0.14393.0)
PDF length:	5
Capture ID:	ba3bd4de-5b6c-4a8d-8860-0c472e8f35a6
User:	pagevault-jordan


EXHIBIT 9








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 **David ybarra** @CaimeHurtles · Nov 3, 2019
Replying to @MarcoStyleNL
@fwiz can you help Marco out?


 **Jaz Kuyper** @JAZvonD · Nov 3, 2019
Replying to @MarcoStyleNL
@KEEMSTAR help this guy


 **Mr. 304** @DHeishman304 · Nov 3, 2019
Replying to @MarcoStyleNL
@Fwiz can you help Marco out


 **Arthur** @D3AD_LIN3 · Nov 3, 2019
Replying to @MarcoStyleNL
@TeamYouTube

 **Jason Ovalle Sr** @JRBLOODMIST · Nov 3, 2019
Replying to @MarcoStyleNL
@TeamYouTube @YTCreators @YouTube Help him out !!! i mean if you can't help me get my account back at least help someone else !


 **heatinghawk38** @heatinghawk38 · Nov 3, 2019
Replying to @MarcoStyleNL
This is why you use 2 step varification


 **MarcoStyle** @MarcoStyleNL · Nov 3, 2019
i have 2 step, it didnt help


 **heatinghawk38** @heatinghawk38 · Nov 3, 2019
Damn, but like I said I just hope that you're able to recover from this


 **S4ltyByNatur3** @KadvaelGaming · Nov 3, 2019
was it 2 step using mail, app or text msg ?
if it was mail, you can guess they hacked mail first.


More replies


 **Lutharr101** @Lutharr101 · Nov 3, 2019
Replying to @MarcoStyleNL
I bet ya wish ya hadnt made fun of those emails now huh. I shouldnt laugh at your misery, but Im afraid its to late to stop now :D

 **Theo Spanos** @spanos_t · Nov 3, 2019
Replying to @MarcoStyleNL
I never liked you much but you make good content. Nobody deserves to have their livelihood messed with. I hope YouTube can figure this out for you and you can get back to your life. Shame on the losers who do things like this to people.


 **Waldi** @Waldi84572975 · Nov 10, 2019
Replying to @MarcoStyleNL
H

 **Yos Wowor** @yoswowor · Nov 3, 2019
Replying to @MarcoStyleNL
This is nothing to laugh about guys, you need to call Google support asap Marco.
You guys don't understand this is his lifes work and his livelyhood at stake here.
It's not funny at all.

 **Lutharr101** @Lutharr101 · Nov 3, 2019
it kinda is though

 Search Twitter

Relevant people

 **MarcoStyle** @MarcoStyleNL [Follow](#)
Guy that makes videos, mostly about Destiny 2 at the moment. Business Only: marcostyle@moreyellow.com
Partnered with: advanced.gg/ref/MARCOSTYLE

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27K Tweets

#GalaxyS20
Found with Galaxy S20 5G
Promoted by Samsung Mobile US

Politics · Trending
#RIPNateWoods
11.3K Tweets

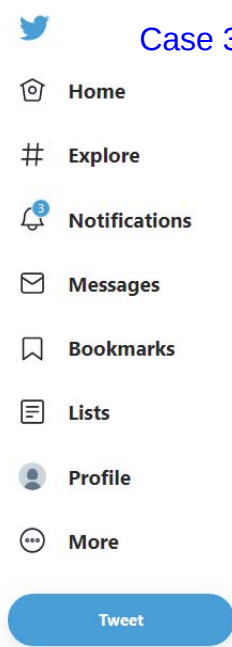
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7,736 Tweets

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Tweet

@Fwiz can you help Marco out

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Yos Wowor @yoswowor · Nov 3, 2019
Replying to @MarcoStyleNL
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Angry Black Women
7,736 Tweets

Trending in United States
#FridayThoughts
46.9K Tweets

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Document title: (3) MarcoStyle on Twitter: "And now my youtube is unlinked from my google account, just lost it too..." / Twitter

Capture URL: <https://twitter.com/MarcoStyleNL/status/1191002714500685827>

Captured site IP: 104.244.42.129

Page loaded at (UTC): Fri, 06 Mar 2020 16:05:16 GMT

Capture timestamp (UTC): Fri, 06 Mar 2020 16:07:02 GMT

Capture tool: v6.13.15

Collection server IP: 54.174.78.137

Browser engine: Chrome/70.0.3538.77

Operating system: Microsoft Windows NT 10.0.14393.0 (10.0.14393.0)



PDF length: 6

Capture ID: 167ec426-c31d-4470-9f1a-328748e140de

User: pagevault-jordan

EXHIBIT 10

Verification badges on channels

When you see a  or  verification check mark next to a YouTube channel's name, it means that YouTube has verified that channel.

Apply for channel verification

You can submit a request for a channel verification once you have 100,000 subscribers. It looks like your channel isn't eligible yet.

If this seems wrong, make sure you're signed in with the email address for the eligible channel. Click your profile picture in the top-right and choose that account.

To see if your channel is eligible to request verification, click **Sign in** at the top-right.

We won't verify channels that are trying to impersonate another creator or brand. If we find a channel is deliberately impersonating someone else, we may take additional action.

About verified channels

If a channel is verified, it's the official channel of a creator, artist, company, or public figure. Verified channels help distinguish official channels from other channels with similar names on YouTube.

Keep in mind...

- Verified channels don't get extra features on YouTube. They also don't represent awards, milestones, or endorsement from YouTube. For info on awards, learn more about [YouTube's Creator Awards program](#).
- If your channel is verified, it will stay verified unless you change your channel name. If you change your channel name, the renamed channel won't be verified, and you'll need to reapply.
- YouTube reserves the right to revoke verification or terminate channels that violate our [Community Guidelines](#) or the YouTube [Terms of Service](#).
- Verification has changed over time, so you may see many types of channels with verification on YouTube.

Verified channel eligibility

To be eligible to apply for verification, your channel must reach 100,000 subscribers.

After you apply, we'll review your channel. We verify channels that:

- **Are authentic:** Your channel must represent the real creator, brand, or entity it claims to be. We'll check different factors to help verify your identity, such as the age of your channel. We may also ask for more info or documentation.
- **Are complete:** Your channel must be public and have a channel banner, description, channel icon, and content, and be active on YouTube.

In some cases, YouTube may also proactively verify channels with fewer than 100,000 subscribers that are well-known outside of YouTube.

Distinguish your channel without verification

If your channel isn't verified, here are some other ways to distinguish your channel from similar channels:

- Use a [unique channel name](#) that represents who you are and the type of content you publish.
- Use a high-quality image for your [channel icon](#) to make your channel look professional in search results.
- [Customize your channel art and layout](#) for a personalized look and feel on your channel page.







If someone is impersonating you or your channel, [report it to us](#).

Was this helpful?


Yes

No

Customize & manage your channel

-  [Verification badges on channels](#)
-  [Manage advanced channel settings](#)
-  [Related channels discontinued May 2019](#)
-  [Change your channel name or description](#)

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- [Customize your channel art and layout](#) for a personalized look and feel on your channel page.





 If someone is impersonating you or your channel, [report it to us](#).

Was this helpful?

Yes

No

Customize & manage your channel

-  Verification badges on channels
-  Manage advanced channel settings
-  Related channels discontinued May 2019
-  Change your channel name or description

Document title: Verification badges on channels - YouTube Help

Capture URL: <https://support.google.com/youtube/answer/3046484?hl=en>

Captured site IP: 172.217.15.110

Page loaded at (UTC): Fri, 06 Mar 2020 16:08:14 GMT

Capture timestamp (UTC): Fri, 06 Mar 2020 16:08:35 GMT

Capture tool: v6.13.15

Collection server IP: 54.174.78.137

Browser engine: Chrome/70.0.3538.77

Operating system: Microsoft Windows NT 10.0.14393.0 (10.0.14393.0)

PDF length: 3

Capture ID: 937f7b5b-0882-416f-a2c5-a27dd13f3d18

User: pagevault-jordan

EXHIBIT 11

Sign up and manage your account > Verify your YouTube account

Verify your YouTube account

To verify your channel, you'll be asked to enter a phone number. We'll send a verification code by text or voice call to that phone number.

Once you've verified your account, you can:

- Upload videos longer than 15 minutes
- Add custom thumbnails
- Live stream
- Appeal Content ID claims

You may also be asked to verify your account when you sign up.



Why does YouTube ask for my phone number?

We take spam and abuse seriously. Using phone numbers to verify identity is one way to protect our community and combat abuse.

We use the phone number to send you a verification code. We also make sure the phone number is not being used on a large number of accounts.

Note: We don't sell your personal info to anyone.

I haven't received the verification code

You should get the code immediately. If you haven't, you can request a new code. Make sure you're not running into one of these common problems:

- **Some countries/regions and carriers don't support text messages from Google.** Most mobile carriers support text messages from Google. If your carrier doesn't support text messages from Google, you can try the voice call option, or use a different phone number.
- **There are too many accounts with the same phone number.** If you see the error message, "This phone number has already created the maximum number of accounts," you'll have to use a different number. To help prevent abuse, we limit the number of accounts that can be associated with each phone number.
- **Text message delivery can be delayed.** Delays can happen in densely populated areas, or if your carrier's infrastructure isn't well maintained. If you've waited more than a few minutes and still haven't received our text message, try the voice call option.

Was this helpful?

Yes

No

Sign up and manage your account

- Create an account on YouTube
- Use your Google Account for YouTube
- Create a new channel
- Verify your YouTube account

Document title: Verify your YouTube account - YouTube Help

Capture URL: <https://support.google.com/youtube/answer/171664?hl=en>

Captured site IP: 172.217.15.110

Page loaded at (UTC): Fri, 06 Mar 2020 16:08:48 GMT

Capture timestamp (UTC): Fri, 06 Mar 2020 16:09:00 GMT

Capture tool: v6.13.15

Collection server IP: 54.174.78.137

Browser engine: Chrome/70.0.3538.77

Operating system: Microsoft Windows NT 10.0.14393.0 (10.0.14393.0)

PDF length: 2

Capture ID: ff3f1ee1-63f0-4849-83a6-2c188b30e931

User: pagevault-jordan

EXHIBIT 12



Benjamin

Chaos is a ladder.



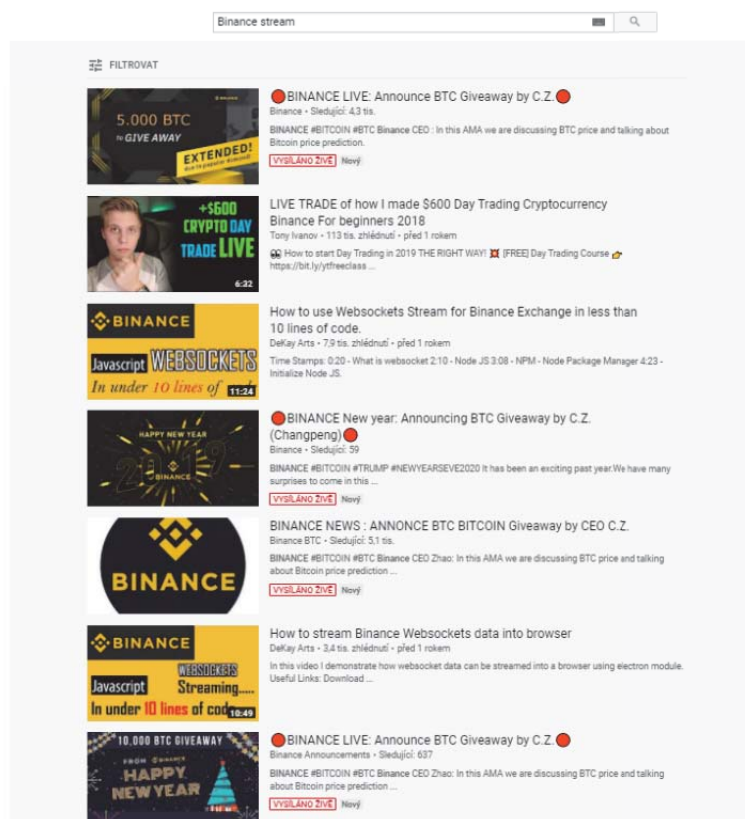
YouTube Fake Crypto Giveaways Explained - Behind The Account Hacks

January 24th 2020

 [TWEET THIS](#)

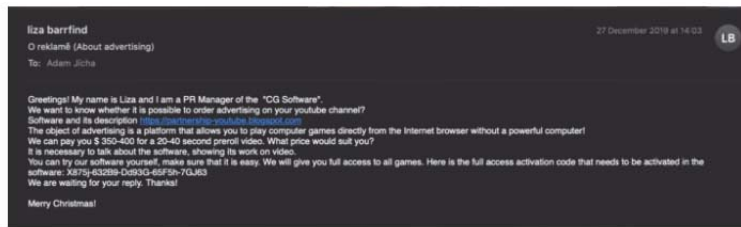


Maybe you have noticed that there is a lot of fake Binance, Ethereum, Ripple and Bitcoin Cash streams on Youtube lately. The crazy part is that those live streams are on a big accounts with thousands of subscribers.

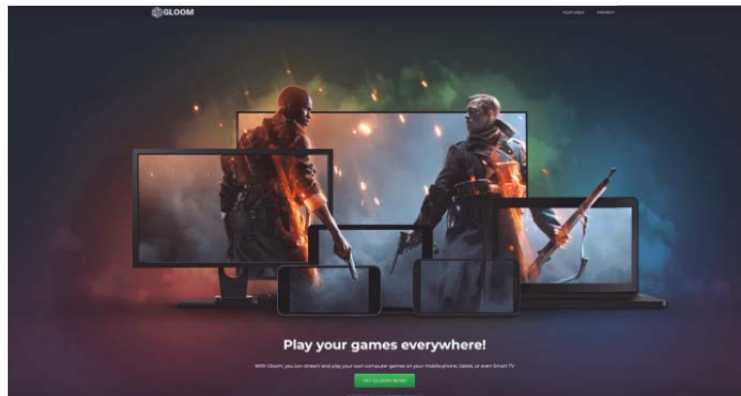


The scammer or group of scammers most likely from Russia started a new scam that is targeting YouTubers. They simply write you an offer to promote their platform on your youtube channel in the form of a special video.

The scammer or group of scammers most likely from Russia started a new scam that is targeting YouTubers. They simply write you an offer to promote their platform on your youtube channel in the form of a preroll video.



They want you to download and try out their platform to see how it is and if you are interested. After clicking on the shady link it will take you to their website that is made in a 1:1 ratio with another website from a real company.



After downloading and running the program nothing will happen, but in the background, there is a program running.

What is the program doing?

- Screenshot of your PC screen.
- Text document with all information about your PC.
- Text document with all passwords saved in your browser + copies your session ID.
- Download cookies from your browser
- Gets remote access to your computer without you noticing.

All that repeating every 5 seconds.

If they get access to your YouTube account they will just turn to rename the account to Binance or Binance announcements, hide all old videos, change profile picture and run a streaming loop with a fake giveaway in the description to scam people of money.

This happened to a lot of YouTubers lately. According to unofficial information, it could be over 50+ YouTubers with big fanbases.

Because of scammers are able to copy your browser session and cookies they

This happened to a lot of YouTubers lately. According to unofficial information, it could be over 50+ YouTubers with big fanbases.

Because of scammers are able to copy your browser session and cookies they are able to bypass *Two-Step Verification*.

Conclusion

Scammers will always look for new tricks and ways to scam people. Sometimes they use people's naivety or carelessness. If you are a YouTuber be careful and don't fall for such a cheap trick. It's not always Binance, sometimes it's Ethereum or Ripple, but in 90% of cases, it's Binance.

On top of everything, YouTubers can lose their sensitive personal data if they hold them on their PC. One Czech YouTuber lost his ID to a scammer to find selling on the dark web 3 days later.

Among accounts that have been scammed are for example Roth Wellden that have over 300K subscribers, his account was broadcasting Binance fake giveaway for 3 days before his account was restored, but not everyone is lucky and some can't restore their accounts.

Be careful, not only YouTubers but everyone because scammers are trying their best.

REAL STORIES BEHIND YouTube hacks

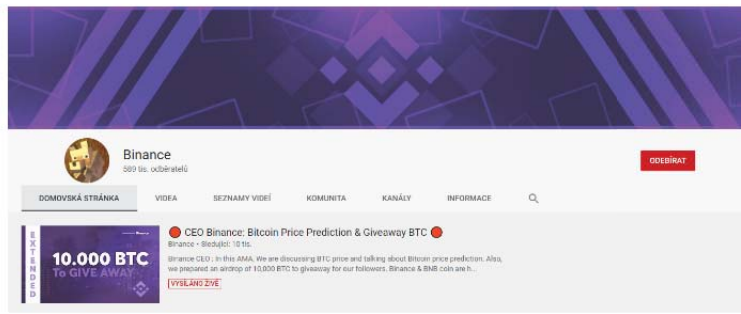


In this article, we will focus on a real examples of hacked YouTubers. If you want to read the previous article on how the scammers were able to steal those accounts [click here](#).

Since my last article, a lot of you asked if this is truly real if those accounts are stolen from the real creators and the answer is YES... According to my observation in most of the cases, we can prove that there was a real person behind that account before.

GhostBlock - 589 000 (Article updated to add this story 10.01)





GhostBlock hacked!

GhostBlock is a famous YouTuber with a huge community and close to 60M views in total. He is doing animated Minecraft videos. Today (10.01) he was hacked and hackers instantly turned ON Binance fake giveaway to scam his community. There are even videos coming from his fans that are confused about what's happening and who's Binance CZ.

Man...your channel got hacked...

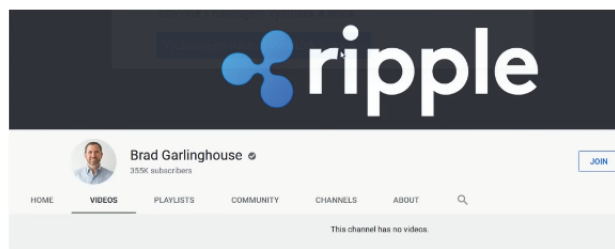
What heppend to your chanel! 😞

WHAT HAPPENED TO YOUR CHANNEL?!!

What Happen to GhostBlock?

Those are just few examples of comments by his confused community. Youtube needs to act fast and precise to stop hackers from taking an advantage of such a huge community.

2. MarcoStyle - 355 000 subscribers *Account restored*



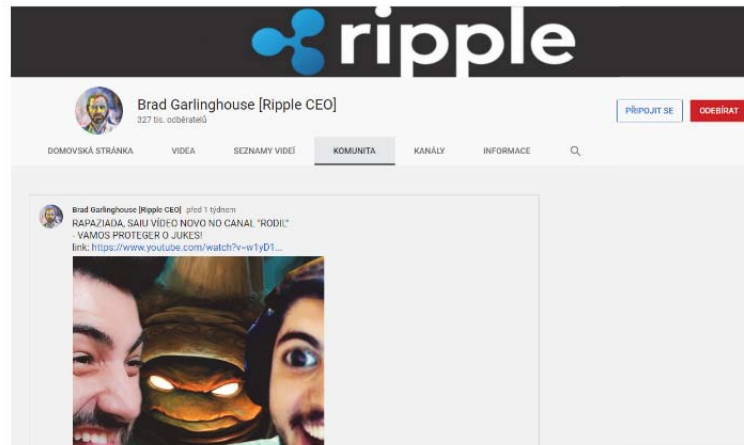
Using Marco as an example we can truly unveil YouTube's ignorance and slow approach towards creators that are operating on their platform. Marco got his account hacked and it took 2 weeks to restore it.

YouTube acknowledges the fact that his account was stolen since day one, but nothing happened to the hacker! He was freely using the account, streaming and scamming Marco's community that he was building for years. On top of that, they kept the Marcos verified badge ON! Doing scammer a favor to look legit. Marco's community was scammed of \$15,000 in Ripple during the fake giveaway.

Eventually, Marcos got his account back after 2 weeks, but the fact that YouTube did nothing to protect his community during the hack is disgusting.

Eventually, Marcos got his account back after 2 weeks, but the fact that YouTube did nothing to protect his community during the hack is disgusting. Marco's story was covered in [Forbes](#).

3. [Rodil](#) - 327 000 subscribers

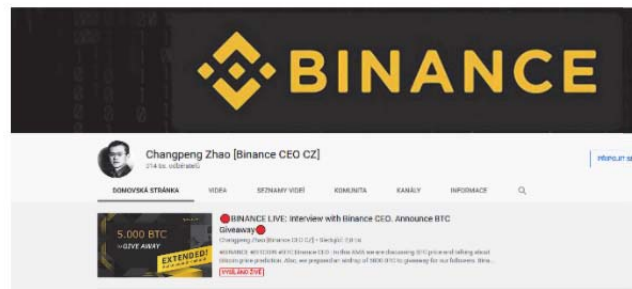


Rodil is Portugesse gamer, YouTuber and streamer. Three of His accounts were hacked over one week ago. Something that he was building for so long is lost now. He is desperately trying to reach youtube, but it seems like they are ignoring him and his community. Meanwhile the hacker aka. *Brad Garlinghouse [Ripple CEO]* is happily broadcasting scammy giveaway.

This is from Rodil's twitter

Guys, I got robbed! RT THIS POST PLEASE
I lost access to my 3 channels, "Festinha do Rodil", "RodilL" and "Rodilzera".
When I go to any of these channels, ask me to create a channel from 0, with a new name. That is, they unlinked my channels to another email

4. [Roth Wallden](#) - 307 000 subscribers *Account restored*

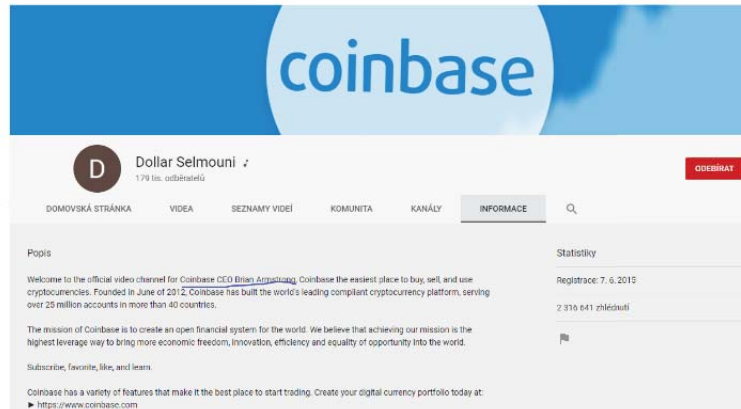


The story was almost the same as in Marco's case. Roth Wallden was hacked while downloading software from the scammy email. In his case, the account was held by the hackers for 3 days. According to him, YouTube has acknowledged the hack since day one but did nothing to stop the hacker streaming fake giveaway. Finally, thanks to his constant pressure on YouTube,

while downloading software from the scammy email. In his case, the account was held by the hackers for 3 days. According to him, YouTube has acknowledged the hack since day one but did nothing to stop the hacker streaming fake giveaways. Finally, thanks to his constant pressure on YouTube, big follower base and connections he was able to recover his account after 3 days.

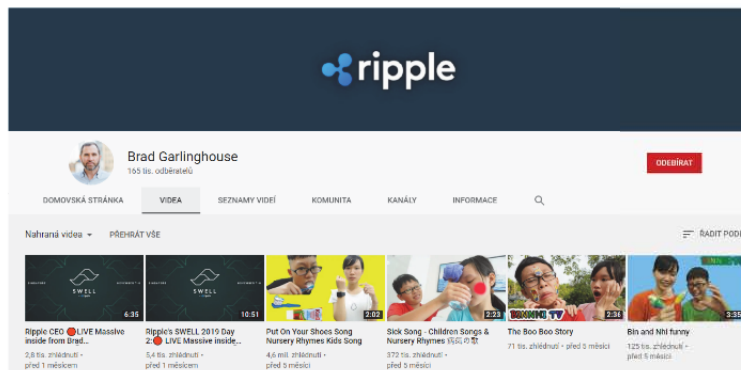
Not only that his YouTube was stolen it was available on the black market for 0.45 BTC

5. Dollar Selmouni 179 000 Subscribers



Dollar Selmouni is a Hispanic musician with an official badge on YouTube. His account is still being held by hackers despite that it was hacked over 1 month ago! Broadcasting fake Ripple giveaways. Right now it seems like the hackers are not using this account to broadcast giveaways, but more likely it's already on the black market waiting for the "new owner". How is it possible? That verified musician by YouTube wasn't able to recover his account?

6. BinNhiTV 165 000 subscribers



Group of people mainly kids from Philippines making songs for kids with over 42 000 000 of total views were hacked 5 months ago. The hacker didn't even bother to delete the old videos. There is a big problem with YouTube that they are ignoring most of the hacks and by doing so they expose innocent communities to hackers.

7. GratakosYT - 128 000 subscribers

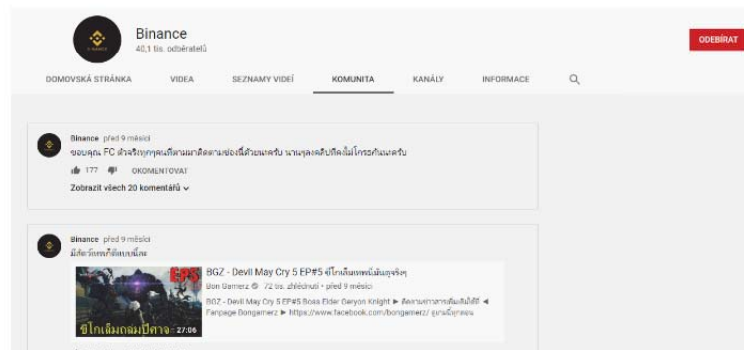
7. GratakosYT - 128 000 subscribers



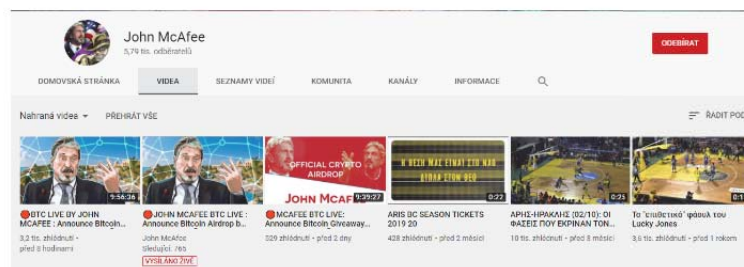
GratakosYT was doing games clips on youtube, but his account was lost to the scammers. GrakatosYT community is constantly reporting his hacked account trying to reach YouTube, but with no result so far. Is this bad staff? or just pure ignorance from YouTube? not caring about creators nor their community. It's clear that the account is hacked yet they are not banning the stream in order to protect the Grakos community. He was forced to create the second channel and start all over again.

OTHER EXAMPLES OF HACKED ACCOUNTS

Thai gaming channel

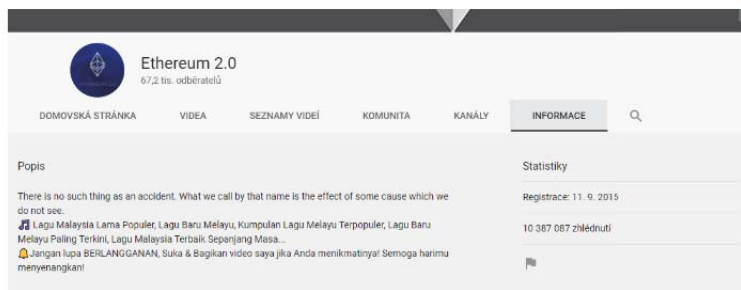


Greek Basketball team

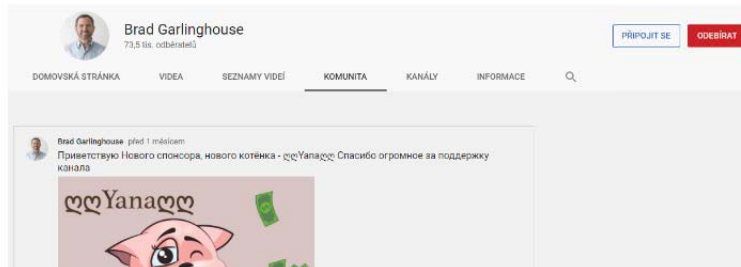


Malaysian music channel with over 10 000 000 total views

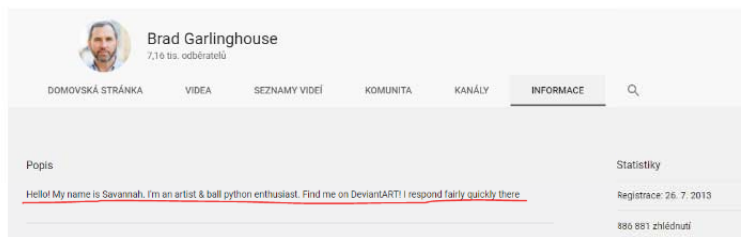




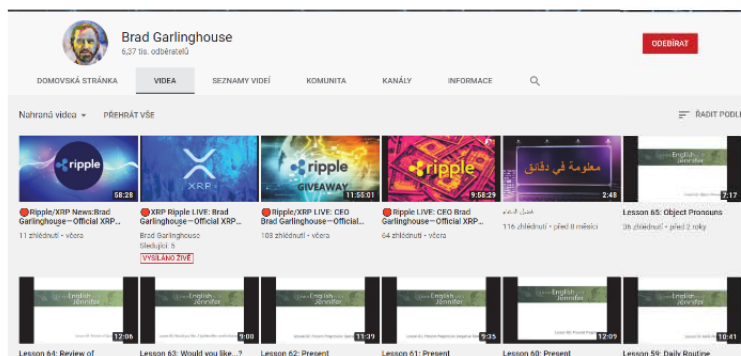
Russian YouTuber Katyusha



YouTube artist Savannah



YouTube educational channel



There are so many more examples, but it's simply impossible to highlight them all. We can clearly see that YouTube is doing close to 0 to stop those hackers. Creators with a lot of subscribers might have a chance to recover their account thanks to publicity, however, when someone has less than 100K subscribers it seems like YouTube doesn't even care.

For many of those smaller YouTubers its years and years of work and thanks to YouTube, it seems like they lost it all.

For many of those smaller YouTubers its years and years of work and thanks to YouTube, it seems like they lost it all.

YouTube's approach is weird and unprofessional allowing the scammers to stream their fake giveaways even when they acknowledge that the account was stolen. It looks like they are working with the hackers, not against them.

Let's hope that thanks to bigger publicity YouTube will fix this mess soon.

Thank you for reading

Benjamin from [DAO Makers](#)

Tags

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The Complete Story Behind the OneCoin Cryptocurrency Scam

Benjamin
January 12

Onecoin



Are Exchanges Manipulating the Price on Initial Exchange Offerings?

Benjamin
November 23

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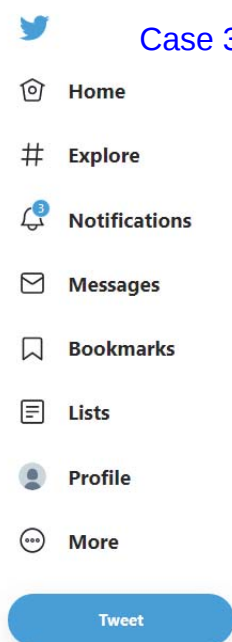
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Document title:	YouTube Fake Crypto Giveaways Explained - Behind The Account Hacks - By Benjamin
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Captured site IP:	35.224.188.159
Page loaded at (UTC):	Fri, 06 Mar 2020 16:09:11 GMT
Capture timestamp (UTC):	Fri, 06 Mar 2020 16:10:01 GMT
Capture tool:	v6.13.15
Collection server IP:	54.174.78.137
Browser engine:	Chrome/70.0.3538.77
Operating system:	Microsoft Windows NT 10.0.14393.0 (10.0.14393.0)
PDF length:	11
Capture ID:	c14d1f91-74fb-4c36-b080-99b5d648d581
User:	pagevault-jordan

EXHIBIT 13




N8 sworn enemy of Brad Garlinghouse @BestestGuyEver

Welp, no point in staying quiet anymore.

Multiple channels I own to appear to have been stolen a few days ago. BestGuyEver is streaming some cryptocurrency thing I obv did not set up. I hope to get them back before too much damage is done.

My deepest apologies for this. 🙏



DETAILS ABOUT THE GIVEAWAY ARE IN THE DESCRIPTION

#RIPPLE #XRP #Cryptocurrency

Ripple is about to **EXPLODE** ⚡ - XRP 2.0 Release and much more: XRP cryptoc...

2,201 watching now

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Brad Garlinghouse
SUBSCRIBED JOIN

4:47 PM · Jan 26, 2020 · Twitter for Android

160 Retweets 1K Likes

N8 sworn enemy of Brad Garlinghouse @BestestGuyEver · Jan 26
Replying to @BestestGuyEver
Cmon Brad Garlinghouse my dude why you gotta play me like this? 😏

Brad Garlinghouse
SUBSCRIBED JOIN

11 12 329

Digibro Still Hasn't Shut Up @Digibrah · Jan 26
Replying to @BestestGuyEver
@bgarlinghouse has some answering to do for this literal crime

2 70

Little Kevin ⚡ (リトルケビン ⚡) (birthday in 20 days) · Jan 26
You said it digi. We ain't gonna let this poop log worm his way outta this one. Let's teach this sick freak some manners 🚫

1 2

Star @StarParty04 · Jan 26
poop log

1

I Hate Anime @AniMaikaru · Jan 26
Replying to @BestestGuyEver

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Star @StarParty04 · Jan 26
poop log

I Hate Anime @AniMaikaru · Jan 26
Replying to @BestestGuyEver
Hey @TeamYouTube I'm having trouble paying for my #youtubepremium

Inmune Orangotan @DrOtterCIM · Jan 26
Replying to @BestestGuyEver
damn you Nate I already bought 1.000.000.000.000.000 XRP

Airlim @Mainstreamlive · Jan 26
Replying to @BestestGuyEver
It's happened to my friend quite recently and other youtubers but yet @TeamYouTube aren't doing anything about it properly. If you get some where could you share how you did it? Hate seeing good people's work being stolen

Subsonic Sparkle @SubsonicSparkle · Jan 26
Replying to @BestestGuyEver
I've been watching this waiting for the joke for like 10 mins now.

Brad Garlinghouse
SUBSCRIBED JOIN

Started streaming 28 minutes ago

#RIPPLE #XRP #Cryptocurrency

Kishin AKA Hoppy the GOD @SlayerKishin · Jan 31
In listened to the whole thing and it was actually hilarious and a great experience, especially when you're completely unsure if it's a meme or not

R. J. @666reasons · Jan 26
Replying to @BestestGuyEver
And I lose another YouTuber? NO! @TheQuartering please help him spread the word, also @TeamYouTube do something!

VA/Artist Lisa M @ArtistLisaM · Jan 27
Who else did they get? A friend just told me about it and I'm looking around, trying to find out more about this.

Funebure @Fune_Bure · Jan 26
Replying to @BestestGuyEver
Woke up and saw that notification, was so bizarre... instantly turned to Twitter, hope you get the channel back as soon as possible,

SGSAMI @SGSAMI · Jan 26
Replying to @BestestGuyEver
@JaymesHanson THEY GOT ANOTHER ONE!

JaymesHanson @JaymesHanson · Jan 26
If you dont have a network to insta talk to like discord, all i provide is this
support.google.com/youtube/answer...

TheHunterxHunter2011DickRidingAssociation @HxH2011... · Jan 28
Replying to @BestestGuyEver and @Ember_Reviews
Hope youtube fixes this, it's disgraceful this hasn't been fixed yet

Foxy Socks Kettu @FoxySocksKettu · Jan 26
Replying to @BestestGuyEver

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@BestestGuyEver
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Replying to @BestestGuyEver and @Ember_Reviews
Hope youtube fixes this, it's disgraceful this hasn't been fixed yet

5

Foxy Socks Kettu @FoxySocksKettu · Jan 26
Replying to @BestestGuyEver
@TeamYouTube Hey, this guy can't access his account to pay for YouTube Red. Anything you can do to help? :)

3

NeonManta @NeonManta · Jan 26
Replying to @BestestGuyEver
Stealing a moderately popular YouTube channel with a dedicated audience and using it to try and promote a literal who cryptocurrency is like some Andromeda brain game.

3

Dekomori Wa Eden @KorewaEden_ · Jan 26
Replying to @BestestGuyEver
fuck

1

Hurr Durr @MonkeyShinesu · Jan 26
Replying to @BestestGuyEver
"Let's give this guy who's obviously a criminal money" - Someone?

1

Spandex Butterfly @RadAsFuckIRL · Jan 26
Replying to @BestestGuyEver
What are they expecting out of this?
"Oh, we'll steal this channel, all those subscribers are just waiting to watch our garbage, I bet."
???

3

Makulatoreen @Makulatoreen · Jan 26
The stream just looks like one giant ad. So I would assume that as long as people are watching they're getting money.

Aureliano Kero @AurelianoK92 · Jan 26
Replying to @BestestGuyEver
Did you set up 2-step authentication Nate?

4

Aydan @SSJ2Aydan · Jan 27
Depending on what happened, two factor authentication may not have helped. There is a certain scam that @DmontyGaming fell for that actually bypasses it. Basically he was sent an email that said it was a sponsor and he clicked on the link. Now there are many suspicious emails-

3

2 more replies

Lumia @lumia_stargazer · Jan 26
Replying to @BestestGuyEver
I hope you get your channel back soon N8

2

P2HTUSYP @P2HTUSYP · Jan 26
Replying to @BestestGuyEver
same damn thing happened to MarcoStyles not long ago. Get with YouTube about it as fast as you can @MarcoStyleNL @YouTube #howdoesthisgarbagekeep happening

2

Toxicitzi @toxicitzi · Jan 26
Replying to @BestestGuyEver
I assume you know what to do from here, best of luck Nate in recovering this.
Maybe a 2-way authentication will help if you haven't added it.

2

びがくてき @AestheticGoul · Jan 26
Replying to @BestestGuyEver
No need to apologize man, it's not your fault

GRYLTNG @graylightning69 · Jan 26
Replying to @BestestGuyEver
As long as you get them back my nibba

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 **GRYLTNG** @graylightning69 · Jan 26
Replying to @BestestGuyEver
As long as you get them back my nibba


   





 **LocalEboy** @MonkExile · Jan 26
Replying to @BestestGuyEver
Hope everything goes well guy!


   





 **BoneHeads** @HeadsBone · Jan 28
Replying to @BestestGuyEver
This kinda looks like another Gratakos situation though I really hope it isn't and you get your channel back if YouTube will get the stick out of their ass and do something about this, love your content.


   





 **Otto J. K.** @Otto_JK · Jan 26
Replying to @BestestGuyEver
Thanks Brad


   1 





 **I Hate Anime** @AniMaikaru · Jan 26
Replying to @BestestGuyEver
We are onto you brad


   1 





 **Cody Bond** @mufafa777 · Jan 26
Replying to @BestestGuyEver
Same exact thing happened to Pogo


   1 





 **VKnits** @boop5000 · Jan 26
Replying to @BestestGuyEver
Oh, I got a notification for this stream earlier. Didn't recognize the name I just ignores it. Makes sense why I got it now.


   1 





 **TeamYouTube** @TeamYouTube · Feb 3
Replying to @BestestGuyEver
Jumping in here to help – we're sorry for not seeing this sooner! We'll DM you with next steps.


   1 





 **Nerd** @youfreakinnerd · Jan 26
Replying to @BestestGuyEver
Ohhh no


   





 **Kato** @KatoFudge · Jan 26
Replying to @BestestGuyEver
I was wondering what the hell that was


   





 **Sudoquin** @Dunpeal6661 · Jan 26
Replying to @BestestGuyEver
Good luck man. Hope this works out.


   





 **Martin Berrum** @MartinBerrum · Jan 26
Replying to @BestestGuyEver
3k viewers lol


   

 **kino king** @truekinoking · Jan 26
Replying to @BestestGuyEver
nate dont apologise your the one this is gonna hurt

 **Anthony** @96AnthonyS · Jan 26
Replying to @BestestGuyEver
@TeamYouTube

 **Breadwinner** @breadw1nner455 · Jan 26
Replying to @BestestGuyEver
Rats this is 4chan at work. But seriously good luck to you dude.

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 **N8 sworn enemy of B...** @BestestGuyEver [Follow](#)

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Breadwinner @breadw1nner455 · Jan 26
Replying to @BestestGuyEver
Rats this is 4chan at work. But seriously good luck to you dude.

that guy @Seranhi · Jan 26
Replying to @BestestGuyEver
A lesson of using 2 step verification in the making

Kyle - WW @TrashWhimsicott · Jan 26
Replying to @BestestGuyEver
@TheQuartering if you can spare a video, help a man out

Mike da Media Dragon @MikeMediaDragon · Jan 26
Replying to @BestestGuyEver
This is terrible. I hope you get everything back

Suicide Snake @Suicide_Snek · Jan 26
Replying to @BestestGuyEver
I've been seeing shit like this happening lately. Let's hope YouTube will start fixing things soon.

Wailos @Wailos2 · Jan 26
Replying to @BestestGuyEver and @Nux_Taku
Well damn, same thing happened to @JaymesHanson not to long ago

Emgorse @EmGorse · Jan 26
Replying to @BestestGuyEver and @Digibrah
Other than trying to raise the visibility of this through responses and re-tweeting is there anything that can be done by us outside observers?

JHawkDX @JHawkDX · Jan 26
Replying to @BestestGuyEver
Damn hope this gets sorted out

F4 the Hman @F4bian_with_4 · Jan 26
Replying to @BestestGuyEver
Spiral GODSPEED fot you bestnate the bestman

nekora @NEKORA · Jan 26
Replying to @BestestGuyEver
so sorry this happened to you, gonna unfollow the channel for now but hope you can reclaim it somehow or recover from this...just not right this is allowed to go on.

Juan in a million 🇺🇸🇮🇹 @J_Cruz99 · Jan 26
Replying to @BestestGuyEver and @Nux_Taku
This is the same thing that happened to @MarcoStyleNL a while back it sucks to see this happening again

Roccu @RochSerio · Jan 26
Replying to @BestestGuyEver
It happened to @MarcoStyleNL too, maybe he can offer some help.
PS: Sorry Marco for bringing back such bad memories

Baphomette 🍷 @trveweeb · Jan 26
Replying to @BestestGuyEver
The funniest thing about this is that I have some XRP

Daniel Norton @DanielN68882375 · Jan 26
Replying to @BestestGuyEver
This could be leading up to a review of C Control.

GenerallyBananas @GenerallyBananas · Jan 26

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This could be leading up to a review of C Control.

GenerallyBananas @GenerallyBananas · Jan 26
Replying to @BestestGuyEver
Jeeze, good luck getting the channel back N8!

fuero @robersora · Jan 26
Replying to @BestestGuyEver
Sheesh

Roadway Cat @MagicalMushies · Jan 26
Replying to @BestestGuyEver and @Digibrah
I hope you get your channel back Brad

Matthew Holgate @MattyHolgate · Jan 26
Replying to @BestestGuyEver
This seems to be the same shit that got @OfficialPogo

Sir Dr. Rev. Cody Robert Mark Jeppesen Esq. @TDNDCody · Jan 27
Replying to @BestestGuyEver
Oh that's what that was.

Martin Vaña @iluzonik · Jan 27
Replying to @BestestGuyEver
Had a feeling you were hacked when I saw that. You and all of PCP should try getting on #floatplane, where you get customer service from actual Canadians.

Luma @PawzLenaLuLa · Jan 27
Replying to @BestestGuyEver and @AntonyCannon
don't think you'll get them back. You're screwed. Stay off YouTube there's no hope for recovery

Alex Martinez @VeryGrimMood · Jan 27
Replying to @BestestGuyEver
@OrdinaryGamers

MetroAndroid @metroandroid · Jan 28
Replying to @BestestGuyEver
Do you have backups of your main channel (or other channel) content or should we start archiving? I already nabbed a few of my favorites just in case, but don't want all that to be lost.

Unlikeable Protagonist - Hata @ShinsekaiNoHata · Jan 26
Replying to @BestestGuyEver
@Youtube
help this man!

OverlordDean @OverlordDean · Jan 26
Replying to @BestestGuyEver
Khantehts about page has been in Russian? for days.

More replies

Jack @Jackisboy · Jan 26
Replying to @BestestGuyEver
Fuck man hopefully you can get this back @TeamYouTube

Zorpad @zorpad90 · Jan 26
Replying to @BestestGuyEver
fuck dude. hope you can reclaim your channel from the bitcoin mafia. this sucks, but it's clearly not your fault.

kaioe @forzazhori · Jan 26

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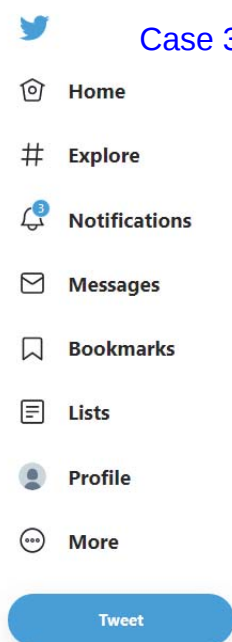
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Zorpad @zorpad90 · Jan 26
Replying to @BestestGuyEver
fuck dude. hope you can reclaim your channel from the bitcoin mafia. this sucks, but it's clearly not your fault.

kaique @forzazhori · Jan 26
Replying to @BestestGuyEver
Khanteht! is also a little fucked apparently

Мне наплевать, что вы обо мне думаете. Я о вас не думаю вообще.

Inscreveu-se em 1 de nov. de 2019

181.926 visualizações

Hanuli @Hanulinen · Jan 26
Replying to @BestestGuyEver
Suspected this because that broadcast is shady as shit. Hope you get your cahnnel back :(

Carlos Carbajal @Kurlozthesparta · Jan 26
Replying to @BestestGuyEver
@TeamYouTube stop fucking ignoring us and help our boi nai

Raiden ͇(〃)͇ @AdrianIdencio · Jan 27
Replying to @BestestGuyEver
Hoping none of your content gets deleted before you get your account back. Your hard work shouldn't be tossed to the wind like a plastic bag.

Show additional replies, including those that may contain offensive content **Show**

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Page loaded at (UTC): Fri, 06 Mar 2020 16:10:12 GMT

Capture timestamp (UTC): Fri, 06 Mar 2020 16:11:25 GMT

Capture tool: v6.13.15

Collection server IP: 54.174.78.137

Browser engine: Chrome/70.0.3538.77

Operating system: Microsoft Windows NT 10.0.14393.0 (10.0.14393.0)

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User: pagevault-jordan